CLINICAL EVALUATION OF SIRUPULLADI ENNAI (A SIDDHA DRUG) FOR THE TREATMENT OF NEERKANAMANTHAM (URI) IN CHILDREN"

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DECLARATION BY THE CANDIDATE

I hereby declare that this dissertation entitled **CLINICAL EVALUVATION OF SIRUPULLADI ENNAI (A SIDDHA DRUG) FOR THE TREATMENT OF NEERKANAMANTHAM (URI) IN CHILDREN** is a bonafide and genuine research work carried out by me under the guidance of **Dr.P.ARULMOZHI M.D(S)** Department of Kuzhandhai Maruthuvam, National Institute of Siddha, Chennai -47, and the dissertation has not formed the basis for the award of any Degree, Diploma, Fellowship or other similar title.

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BONAFIDE CERTIFICATE

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CONTENTS

INTRODUCTION

1. INTRODUCTION

Respiratory tract infection refers to the infectious diseases in the respiratory tract. An infection of this type is normally further classified as an upper respiratory tract infection (URI or URTI) or a lower respiratory tract infection (LRI or LRTI). The upper respiratory tract is generally considered to be the airway above the glottis or vocal cords. However, this includes the nose, sinuses, pharynx, and larynx. The lower respiratory tract consists of the trachea (wind pipe), bronchial tubes, the bronchioles and the lungs. The upper respiratory tract infection (URI) is a nonspecific term used to describe acute infections involving the nose, paranasal sinuses, pharynx, larynx, trachea, and bronchi.Upper respiratory tract infection (URTI) has been recognized as one of the most common medical problems in the daily lives of people worldwide. In 2015, 17.2 billion cases of upper respiratory infections occurred. As of 2014, upper respiratory infections caused about 3,000 deaths down from 4,000 in 1990.

A strong confirmation for the prevention of URTI is rather inadequate, and thus, the patients take preventive measures on the basis of their own experience or preferences. However, an URTI is referred to as a a viral infection causing inflammation and infection in the nose and throat. URTIs are contagious which remain for few hours to 2-3 days of exposure. Also, the symptoms have been knowm to last from 7-10 days, but reports have shown that the symptoms may last even longer.

URTI has been regarded as a nonspecific term that is used to describe acute infections involving the nose, paranasal sinuses, pharynx, larynx, trachea, and bronchi. Although, there have been a range of related conditions that may have similar or overlapping clinical presentations within each category of illness, and hence, judgment is required in determining

the affected respiratory mucosal part. Various signs and symptoms of URTIs have been reporets which include stuffy and runny nose, sneezing, coughing, sore throat, fever, vomiting, irritability, loss of appetite, and watery eyes. However, URTI infections have been suggested to be mild and self limiting, but they have been reported to lead to life threatening complications. Further, the causes of URTIs have been attributed to viral, but studies have also suggested the cause to be bacterial. Viruses causing most URTIs include rhinovirus, parainfluenza virus, coronavirus, adenovirus, respiratory syncytial virus, coxsackievirus, and influenza virus in most cases, whereas beta-hemolytic streptococci, *Corynebacterium diphtheriae*, *Neisseria gonorrhoeae*, *Arcanobacterium haemolyticum*, *Chlamydia pneumoniae*, *Mycoplasma pneumoniae*, *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Bordetella pertussis*, and *Moraxella catarrhalis* are the most common bacteria causing URTIs.

Mostly the pediatric population is probably prone to this type of respiratory infections. Once they are infected they show all the symptoms one by one as said earlier. Since children more sensitive to the illness, it causes more pain in the throat region which causes difficulty in swallowing and breathing, in allopathic system. The children are treated with Anti-biotics, Anti-histamine and De-congesants. However, the results have not been satisfactory due to the development of resistance to antimicrobial drugs as with all medicines; there are a number of side-effects that have been reported with each of the different antibiotics. Common side-effects include soft stools, Diarrhoea or mild stomach upset, Nausea and Peptic ulcer. Less commonly, some people have an allergic reaction to antibiotics. Antibiotics can kill off normal defense bacteria which live in the oral cavity and bowel. This may then allow thrush or other bad bacteria to grow.

But in traditional system most of the formulations in siddha medicine is mostly made with herbs and herbo-mineral drugs for pediatric population in order to eliminate these major issues. Hence I have selected the a siddha formulation *SIRUPULLADI ENNAI which* has been mentioned in the sasthric Siddha literature balavagadam having the indication to treat Kanam All ingredients of this experimental medicine are purely herbal. It is very cost effective, easily prepareble, easily palatable so it may be safe and will have efficacy in treating *NEERKANAMANTHAM* in children. The main ingredient of this formulation is *Sirupulladi leaf* which has Anti-bacterial activity and Anti-inflammatory activitiy. The other ingredients are Sanaki leaf, Poduthalai leaf, Avuri leaf, Kalarchi leaf, Gingili oil.

This dissertation work aims to evaluate the pharmacological activity, physicochemical analysis and clinical studies of *SIRUPULLADI ENNAI* in an attempt to provide a direction for further research.

AIM AND OBJECTIVES

2. AIM AND OBJECTIVES

Primary Aim and Objectives

To evaluate the efficacy of *SIRUPULLADI ENNAI* for the management of NEERKANAMANTHAM in Children under the following preclinical and clinical parameters

- Physico – chemical Analysis, Anti Inflammatory studies, Chemical analysis of trial drug
- Clinical studies

Secondary objectives

- To collect and review the ideas mentioned in the ancient Siddha literature about the disease NEERKANAMANTHAM.
- To explore Definition, Etiology, Clinical features, Diagnosis, Investigations and treatment of NEERKANAMANTHAM as laid down from various siddha literature.
- To make the correlative study of the siddha and modern aspect of this diseases.
- To use the modern parameters in the investigation of the disease that enhances to observe the progress of the patient.

REVIEW OF LITERATURE

SIDDHA REVIEW

3. REVIEW OF LITERATURE

3.1 SIDDHA ASPECT

“சீரணிந்தரனார் பாதம் தேவியின் திருந்தாள் போற்றி

தாரணிமடவாரின்ற தனயந்தன் சிலேற்ப ரோகம்

நாரணிந் திருபத்தொன்றும் நற்குணங்கட்ட சாத்தியம்

பார்தனில் மருந்துங் கூட்டி பல பல கிறிகை சொல்வோம”

இயல் :(Definition)

மாதாக்களின் பிதாக்களின நாத விந்துக்களடங்கிய வாதாதி தோஷங்களினின்று உற்பத்தியாகிக் கருப்பாசயத்து சிசுவைப் பற்றி அச்சிசுவானது ஏழுவகை தாதுக்களும் வன்மையடையுங்காலத்து அதை நோயால் வருந்த செய்யும் நோய்.

A congenital disease of the child arising from the maturity of bad humours inherited from the parents. It is an atrophy resulting from the enlargement of the bowels. This disease progresses in several forms as the child advances in age. (T.V.Sambasivam Pillai part II)

குழந்தைகளுக்கு கணச்சூட்டினாலும் பாலின் குற்றத்தினாலும் வயிறு கோளாறடைந்து உடம்பில் கனப்புண்டாகிச் சுரம் வியர்வை நரம்பு வலி முதலியன ஏற்பட்டு எலும்பு குறுகி உடம்பு இளைத்து வரும் நோய்.

A constitutional disease in children arising from congenital heat or bed nutrition resulting in diarrhoea of the stomach and glowing head in the body.It is marked by fever sweating of the head, nervous affection of the bones, general emaciation.(T.V.Sambasivam Pillai).

சித்த மருத்துவ நூலான பாலவாகடம் (குழந்தை மருத்துவம்),கணத்தினை மூன்று வகையில் வரைமுறைப்படுத்துகின்றது.அவை வரும் வழியினைப் பொறுத்து இரு பிரிவுகளும், தோன்றும் வயதினைப் பொறுத்து ஒரு பிரிவும் ஆகும்.

கணம் தோன்றும் வயது:

‘‘எண்ணவே கணமூன்று வருடந் தொட்டே

ஏழாண்டு மட்டுக்கு மிருக்குங் காலம்’’ - பாலவாகடம்.

வயதைப் பொறுத்து மூன்று கருத்துகள்:

- 3-7வயதில் உண்டாதல்
- பாலும் சோறும் உண்ணும் பருவத்தில் உண்டாதல்
- 3-12 வயதில் உண்டாதல்

நோய் வரும் வழி (Etiology)

"பூங்குழல் மாதே கேளாய்
புதல்வருக்கு ஆண்டு சென்றால்
நீங்கரும் கணையின் தோஷம்
நிறைந்ததோர் நரம்பெல்லாம்
தாங்கியே நின்று தானும்
சாருமே ஊனைப் பற்றி
யாங்குள ரெத்த மெல்லாம்
அமுதன் உண்ணு மென்றே..."

பாலருக்கு ஆண்டு சென்றால் கணையின் தோசம் எழுகிறது. இத்தோசம் நரம்பெல்லாம் தங்கி நின்று ஊனை பற்றும். இதனால் ரத்தம் வற்றும்.

"நிறைந்த தொரு ஆண்டின் மேலாய்
பண்டுசேர் பாலர் மெய்யில்
பன்னிரெண்டாண்டு நிற்கும்
குன்றினில் உமையாள்க் கீசன்
குறித்திதை உத்தாரென்றெ..."

இப்படி வந்த கணைதோசம், எழுந்து பொங்கி பாலகனின் உடம்பில் 12 ஆண்டு நிற்கும். குன்றின் மீது வியாபித்துள்ள சிவப்பிரான் உமையாளுக்கு இதை உரைத்துள்ளார்.

-குழந்தை கணை நோய் மருத்துவம்

"சொல்லிய சென்ன கூற்றால் துடர் பழவினையால் வந்து
நல்லவனருறுப்பின் சார்ந்து மருவிய தோஸத்தாலே
அல்லகசிரசில் நீரால் அன்னையின் பாலினாலும்
கல்லக நரம்பில் தாவி கபமது வந்துசாரும்"

கருமவினையாலும் உறுப்பை சார்ந்த தோசத்தாலும் தலை நீராலும், அன்னையின் பாலின் கேட்டாலும் குழந்தையின் உடலின் நரம்பில் தோசம் தாவி கபம் ஏற்படுகிறது.

‘‘தொகையான கணங்கள் எல்லாம் கர்ப்பச்சூடு’’-(அயோத்திதாசர் பாலவாகடம் -193)

‘‘சூடு’’என்பதை ‘உடலின் வெப்பநிலை’’ என்று கொள்வோமானால் கருவுற்ற காலத்தில் தாய்மார்களுக்கு கிருமி தொற்றினால் சுரம் ஏற்பட்டு, அது பிறக்கும் குழந்தையையும் பாதிப்பதாக கொள்ளலாம்.

மாறாக ‘சூடு’’ என்பதை பித்தம் (அ) அழல் என உயிர்த்தாதுவாக கொண்டால், கருவின் அழல்தாது மாறுபாடு கீழ்க்கண்ட வகையில் உண்டாகலாம்.

- கலவியில் ஏற்படும் விகற்பம்.
- சுக்கில, சுரோணிதங்களின் விகற்பம்.
- கருவுற்ற தாய்மார்களின் உணவுமுறை, செயல்பாடுகள் இவற்றின் விகற்பங்கள்.

கலவியில் ஏற்படும் விகற்பம்:

எண்ணெய் தேய்த்து மூழ்கியபின், உடனே உணவு அருந்தி, உறக்கம் கொள்வதால் உடலின் பித்ததோடம் அதிகரிக்கும். அதே நேரத்தில் உறவு கொள்ளும்போது உண்டாகும் கருவுக்கு கணம் உண்டாகலாம் என்று கருதப்படுகிறது.

சுக்கில, சுரோணிதங்களின் விகற்பம்:

கணமானது, மாதாபிதாக்களின் நாதவிந்துக்களுள் அடங்கிய வாதாதி தோடங்களிலிருந்து உற்பத்தியாகி, கருப்பையின் சிசுவைப்பற்றி, அச்சிசுவினது சப்ததாதுக்களும் வன்மையை அடையும் காலத்தில் பாதிக்கின்றது. (தோடங்கள் விருத்தி அடைகின்றன). - ஆதாரம்- ஜீவரட்சாமிர்தம்

‘‘சுக்கிலத்தில் சுரோணிதங் கலக்குமன்று

புகுந்திடும் வியாதி மூன்றும்’’- தன்வந்திரி நாடி நூல்.

கருவுக்கு அழல்தாதுவினை சேர்ப்பது சுக்கிலமாகும் அதனை பின்வரும் நூல்கள் தெளிவாக கூறுகின்றன.

’’பான்மை என்ற விந்தங்கே யூறும்போது

பாயுமடா வன்னியோடு வாயுதானே’’- அகத்தியர் வல்லாதி நாடி நூல்.

’’உன்னிய கர்ப்பக் குழியாம் வெளியிலே

பன்னிய நாதம் பகர்ந்த பிருதிவி

வன்னியும் வாயுவு மாயிருஞ் சுக்கிலம்

மன்னிய சமனாய் வளர்க்கு முதகமே''- திருமந்திரம்.

கருவிற்கு, விந்துவிலிருந்து - வாதம், பித்தம் என இரண்டு தாதுக்களும் உதகநீர், நாதம் இவற்றிலிருந்து கபமும் கிடைக்கிறது என கருதப்படுகிறது

அதே பாடலில்,

''உதகமுதிர முறுங்கனல் வாயுவால்

சித குறு மங்கங்கள் செய்து முடித்திடும்''

உதகமாகிய நீர், தீ மற்றும் வாயுவின் தன்மையால் செந்நீராக மாறி மற்ற உடல்தாதுக்களான ஊண், கொழுப்பு, என்பு, மூளை, சுக்கிலம் இவற்றை உண்டாக்கும் என கருதப்படுகிறது.

எனவே சுக்கில, சுரோணிதங்களின் குறைபாடு, உதகநீரின் குறைபாடு போன்றவற்றால் கருவின் உயிர்த்தாதுகளில் ஒன்றான அழல் பாதிப்படைவதால் கணம் ஏற்படுகிறது. 'கர்ப்பச்சூடு' என அழைக்கப்படுவதற்கும் அதுவே காரணம் என கருதலாம்.

கருவுற்ற தாய்மார்களின் செயல்பாடுகள்:

''பையர வல்கு லாளும் பசியுடனிருந்த தாலும்

துய்யதோர் குழவிகட்கு கணங்களுந் தோன்றுமன்றே''- பாலவாகடம்.

கருவுற்ற தாய்மார்களின் உணவு பழக்கவழக்கங்கள், செயல்பாடுகள் போன்றவற்றால் தாயின் உடலில் அழல்தாது பாதிப்படைந்து அது கர்பாசயத்தையும் தாக்கும் என ஜீவரட்சாமிர்தம் என்ற நூலில் கூறப்பட்டுள்ளது.எனவே கருவின் அழல்தாதுவில் குறைபாடு தோன்றுவதால் அதன் உடல் தாதுக்கள் பாதிக்கப்படுகின்றன. இதுவே 'கர்ப்பச்சூடு' என அழைக்க காரணமாகவும் அமைந்திருக்கும்.

மாந்த நோயின் தொடர்ச்சியாக கணம் தோன்றும் விதம்:

மாந்தம்: தாய் மற்றும் குழந்தைகளின் உணவாதி (அ) குணவாதி பழக்க வழக்கத்தில் குற்றம் நேரிடும்போது குழந்தைகளுக்கு தோன்றும் செரிமானக் கோளாறுகள், அதனைத் தொடர்ந்த உணவுப்பாதை தொடர்பான உபாதைகளும் மாந்த நோய் என்று அழைக்கப்படுகின்றது.

உணவுப்பழக்கத்தால் மாந்தம் தோன்றுதல்:

உண்ணும் உணவின் செரிமானத்திற்கு,

சமானன் - வாதம்,

அனற்பித்தம் - பித்தம்,

கிலேதகம் - கபம்,ஆகிய மூன்றின் இயல்பான அளவு முக்கியமானதாகும்.

அனற்பித்தம் - உணவுப்பொருள்களின் செரிமானத்தில் முதன்மை பங்கு வகிக்கிறது.

கிலேதகம் - உண்ணும் உணவினை மெத்தென செய்யும்.

சமானன் - மேற்கண்ட இரண்டையும் சமநிலைபடுத்தி, சரியான செரிமானத்திற்கு உதவுகிறது. இது செயலற்றால் செரிமானமே நடக்காது.

மந்தாக்கினி:

மேற்கண்ட மூன்றில் அனற்பித்தத்தின் வன்மை குறைந்தாலோ, கிலேதகத்தின் வன்மை அதிகரித்தாலோ, சமானவாயு தன் இயற்கை நிலையிலிருந்து தவறினாலோ மந்தாக்கினி உண்டாகும். அதனால் உணவுப் பொருட்கள் உடனே செரிப்பிக்காமல், வாயுவால் வயற்றிரைச்சல், குடலிரைச்சல், வயிற்றுப்பிசம் என்னும் இவற்றை உண்டாக்கி நெடுநேரம் கழித்து செரிப்பிக்கும். எனவே உணவின் சாரம் உடலுக்கு கிடைக்காமல் போகின்றது.

.ஐயது கூடிற்றென்றால்: (ஐயம் - உயிர் தாது)

ஐயத்தின் இயற்கை நிலைகள், அதன் மிகுகுணம் போன்றவற்றை ஒப்பு நோக்கும் பொருட்டு கீழ்கண்டவாறு தொகுக்கப்படுகின்றது.

தன்மை:

- தன்மை,நெய்ப்பு,மென்மை,திண்மை
- மந்தம், வழுவழுப்பு

வாழுமிடம்:

- சமானவாயு, சுழுமுனை
- ஆக்கினை, விந்து
- நாக்கு, உண்ணாக்கு
- கொழுப்பு, மச்சை
- குருதி, மார்பு

- நரம்பு, எலும்பு

இயற்கைப் பண்பு:

- நிலைத்தல்
- நெய்ப்பு
- கீல்களின் அமைப்பின் கட்டுகள்
- பொறையுடைமை (பசி, நீர்வேட்கை, கலக்கம், வெப்பம் போன்றவற்றை பொறுத்துக் கொள்ளுதல்)

ஐய மிகுகுணம்:

- அக்கினி மந்தப்படல்,உப்பிசம்,மிகுதூக்கம் உண்டாதல
- வாய்நீர் ஊறல்,இரைப்பு,
- ஊக்கம் குறைதல்,இருமல்
- உடல் கனமாக தோன்றுவதுடன் வெண்ணிறத்தையும், குளிர்ச்சியையும் அடைதல்.
- உடல் முற்றும் உள்ள கட்டுகள் தளரல்

அரிவையர் துயரந் தன்னால்:

அரிவை - பெண்களின் பருவங்களில் ஒன்று. 20-25 வயதானது மகளிர் மகப்பேறு அடையும் பொதுவான காலம் என்பதால், பாடலில் அரிவை என்ற வார்த்தையை மேற்கொண்டிருப்பதை உணரலாம். அப்பருவத்தில் மகளிரின் துன்பங்களான உடல்நலக்குறைவு, பொருளாதாரக்குறைவு போன்றவை குழந்தைகளுக்கு பல இடர்பாட்டினையும், குறிப்பாக கணத்தினையும் உண்டாக்கும்.

செய்ய பற்புனலருந்தி செரிசல தோடந்தன்னால்:

பல்வேறுவகைப்பட்ட நீரினை அருந்துவதால் சலதோடங்கள் உண்டாகி நிலைத்து கணநோய் தோன்றும் என்பது பொருளாகும்.அத்தகைய நீரின் தன்மை, குடித்தலுக்கு ஆகாத நீர் என சித்தமருத்துவத்தில் கூறப்பட்டுள்ள கருத்துகளை காண்போம்.

நீரின் தன்மை: (சித்தமருத்துவாங்க சுருக்கம்)

நீரானது மனதுக்கு களிப்பையும், நிறைவையும் உண்டாக்குவது மட்டுமன்றி உட்கொள்ளும் உணவினை நன்றாய் உடலிற் பரவச் செய்து உடற்கு வன்மையைத் தரும். மேலும் உண்ட கடின உணவுப்பொருட்களை செரிப்பிக்கும். நீருக்கு தனிகுணம் இல்லை. அது தங்கும் இடத்தின் வேறுபாடுகளாலேயே வெவ்வேறு குணங்களை அடைகின்றது.இதனை,

"தண்ணீர் குணமெல்லாந் தான் கேள் மடமயிலே

மண்ணின் குணமல்லால் மற்றுண்டோ?"

- தேரன் பொருட்பன்பு

குளியல் குடித்தலுக்கு ஆகாத நீர்:

"சந்திரா தித்தர் வளி சாராத நீர் புழுதுர்க்

கந்தமதி சேறு கனப்பிலையு - திரிந்த நீர்

தங்குசுவை யில்லா நீர் சாற்றுமிவை ஸ்நானபா

னங்களுக்கா காவுறிநோ யாம். - பதார்த்த குண சிந்தாமணி

திங்கள்,ஞாயிறு இவற்றின் கதிரொளி காற்று இவைகள் அணுகாததும் கிருமி, துர்நாற்றம், சேறு தடித்தல், சருகு உதிரல், சுவையின்மை என்னும் இவைகள் பொருந்தியதும் ஆகிய நீர்,குளியல், குடித்தல் இவைகட்கு ஆகாது. இதை உண்ணின் நோயை உண்டாக்கும்.

மேலும்,

"துலையாக் கிணறே கயந்திரட்டும் "

- இறைப்பில்லா கிணற்றுநீர் கபப்பிணி உண்டாக்கும்.

"வளர்க்குஞ் சுரத்தை சருகூறல் "

- சருகு ஊறிய நீர் சுரம் வளர்க்கும்.

"மாறாக் குளமே வியாதியுண்டு "

- பயன்படுத்தாத குளத்துநீர் வியாதி உண்டாக்கும்.

அவ்வாறு பல்வேறுபட்ட நீரினை அருந்துவதினால் சலதோடம் ஏற்பட்டு கணநோய் தோன்றும் என்று கூறப்படுகின்றது.

பையர வல்குலாளும் பசியுடனிருந்ததாலும்:

(பையர - சூல்கொண்ட: வல்குலாள் - சூலுற்ற பெண்கள்).

சூலுற்ற பெண்கள சரிவிகித உணவினை உண்ணாததால் அவர்களின் உடல்நலன் குன்றி அது குழந்தைகளின் வளர்ச்சியையும் கணநோய் தோன்றுவிக்கும்.

பிற நூல்கள் கருத்து :

திருவள்ளுவநாயனார் இயற்றிய நவரத்தினசிந்தாமணி 800 ல் கூறியவாறு தந்தையின் வேட்கையால் பிண்டம் கனலில் அடிபட்டு கணம் வருவதாக கூறப்பட்டுள்ளது.

"பாரான கெற்பவெட்டை மீரும் பக்குவத்தில்
வேரான விரிந்து வெளிப் பட்டு யோனி விழுந்த தென்றாற்
காரான பிண்டங் கனலிலடி பட்டுக் காந்தினினாற்
கூராய் கணசுர மெய்து மென்றேயான் கூறினேமே"

தன்வந்திரி வைத்தியம் எனும் நூல் கணமானது பூர்வஜென்மங்களில் செய்த தீவினைகளை தந்தையாகவும், இப்பிறப்பில் செய்யும் தீவினைகளை தாயாகவும் அடைந்து "யக் குமாரன்" பிறக்கிறான் என்று கூறுகிறது.

"சீரிய தொன்மை செய்த தீவினை தந்தையாகப்
பாரிலிப் பிறப்பிற் செய்த பாவமே தாயதாகப்
பேரியச் சயக் குமாரன் விறந்திலா கிற மத்தப்பே
காரிய செவிலித் தாயாய் 'கணம்" பெற வளரும் நாளில்".....

கணத்தின் வகைகள்(Types):

பல்வேறு நூல்கள் வெவ்வேறு எண்ணிக்கைகளில் கணத்தினை தொகுக்கின்றன.

பிள்ளைப்பிணி மருத்துவத்தில் கூறப்பட்டுள்ள கணங்கள்-64 வகைகள்

1. வளிகணம்
2. ஐய கணம்
3. நீர்க்கணம்
4. சூலிகணம்
5. மகாகணம்
6. வரள்கணம்
7. வீக்க கணம்
8. அக்கர கணம்
9. எரி கணம்
10. இரத்த கணம
11. மூல கணம்
12. உலரி கணம்
33. அழற்கணம்
34. மாந்த கணம்
35. பிரளிக்கணம்
36.. சுழிகணம்
37. ஊதுகணம்
38. கொதிப்பு கணம்
39. பிறக் கணம்
40. மந்தார கணம்
41. நீராம கணம்
42. முக்கு கணம்
43. பேராம கணம்
44. சிங்கி மாந்த கணம்

13. ஆம கணம்
14. உணக்கு கணம்
15. உன்ரோககணம்
16. ஊதுமாந்த கணம்
17. கரப்பான்கணம்
18. களிகணம்
19. குடல்சோகை கணம்
20. குடலேற்ற கணம்
21. எரி கணம்
22. இரத்த கணம
23. மூல கணம்
24. மகேந்திர கணம்
25. மந்தார கணம்
26. மேக கணம்
27. வாவேந்திர கணம்
28. விஷ கணம்
29. விஷபாககணம்
30. விரதி கணம்
31. வெப்பு கணம்
32.பொருமு கணம்
45. சுத்தி கணம்
46. சர்ப்ப கணம்
47. சித்ரகணம்
48. சுரகணம்
49. தனிசுரகணம்
50. அதிசுர கணம்
51. தூங்கு கணம்
52. தெற்கத்தி கணம்
53. தெற்கத்து மாந்த கணம்
54. நீராம்ப கணம்
55. பட்சி கணம்
56. பால கணம்
57. மூலாதார கணம்
58. வாயு கணம்
59. வாலசந்திர கணம்
60. விஷநீர் கணம்
61. விஷ மாந்த கணம்
62. வீங்கு கணம்
63. குன்றி அக்கர கணம்
64. முடிலோக கணம்

ஆத்மரட்சாமிர்தம் என்னும் வைத்திய சாரங்க சங்கிரகம் - கந்தசாமி முதலியார்

1. வாத கணம்
2. சிலேத்தும கணம்
3. நீர்க் கணம்
4. சூலைக் கணம்
5. மகா கணம்
6. வறட்சி கணம்
7. வீக்க கணம்
8. ஆமக் கணம்
13. பித்த கணம்
14. மாந்த கணம்
15. பிரளி கணம்
16. சுழி கணம்
17. ஊது கணம்
18. கொதிப்பு கணம்
19. பிறக் கணம்
20. வறட்சி கணம்

9. முக்கு கணம்
10. இரத்த கணம்
11. ஊது மாந்த கணம்
12. மந்தார கணம்
21. போர்க் கணம்
22. நச்சு மாந்த கணம்
23. எரி கணம்

அயோத்திதாசர் பாலவாகடம் 24 வகைகள் - பக்கம் - 180 பதிப்பு 1992

1. வளிகணம்
2. அழற்கணம்
3. ஐய கணம்
4. மாந்த கணம்
5. நீர்க்கணம்
6. பிரளிக்கணம்
7. சூலிகணம்
8. சுழிகணம்
9. மகாகணம்
10. ஊதுகணம்
11. வரள்கணம்
12. கொதிப்பு கணம்
13. வீக்க கணம்
14. பிறக் கணம்
15. அந்தக கணம்
16. மந்தார கணம்
17. எரி கணம்
18. நீராம கணம்
19. ஆம கணம்
20. முக்கு கணம்
21. மூல கணம்
22. பேராம கணம்
23. ரத்த கணம்

24. சிங்கி மாந்த கணம்

பரராச சேகரம் பாலரோக நிதானம் - 18 வகைகள்

1. வாத கணை
2. சுரக் கணை
3. வறட்கணை
4. மகேந்திர கணை
5. அனற் கணை
6. வெளுப்புகணை
7. இரத்த கணை
8. கருங்கணை
9. நிலக் கணை
10. பித்த கணை
11. அத்திசுர கணை
12. வாலசந்திரகணை
13. தூக்கு கணை
14. வீங்கு கணை
15. சத்தி கணை
16. மூலக்கணை
17. மஞ்சட் கணை
18. வெப்பு கணை

பிள்ளைப்பிணி வாகடம் - 8 வகைகள்

1. நீர் கணம்
2. மூலகணம்
3. இதய கணம்
4. மலக்கணம்
5. வரள் கணம்
6. சீதகணம்
7. மகாகணம்
8. குண்டலிய கணம்

ஜீவரட்சாமிர்தம் 8 வகைகள்

1. சூலிகணம்
2. ஆமகணம்
3. மகாகணம்
4. கழிகணம்
5. முக்கு கணம்
6. தேரைகணம்
7. சுழிகணம்
8. வறள்கணம்

சாம்பசிவம் பிள்ளை அகராதியின்படி

கணமானது, மாதா பிதாக்களின் நாத விந்துகுள்ளடங்கிய வாதாதி தோடங்களினின்று உற்பத்தியாகிக் கருப்பாசயத்துச் சிசுவைப் பற்றி அச்சிசுவினது எழுவகைத் தாதுக்களும் வன்மையடையுங் காலத்து அதை நோயால் வருந்தச் செய்யும் நோய்.இது தமிழ் வைத்தியப் படி நோயின் குணம் குறி இவைகளின் பெயரிட்டு அனேக விதமாய்க் கொள்ளப்படும்.

கணத்தின் பொது குணங்கள் :

பால வாகடம் கூறும் நோயின் குணங்கள்

- குழந்தைகளுக்கு மாந்த நோய் பலமுறை வந்து முற்றிலும் குணமடையாமல் இருப்பதால் இந்நோய் உண்டாகும்.
- பித்தமானது அதிகமாகி வாயுக்கள் தன் வேலையை செய்ய முடியாமல் தடுத்துவிடும். அதனால் குழந்தைகளின் உடலில் ஏற்பட்ட சூடு எந்நேரமும் விடாது காணும்.
- சுரம் காய்தல்
- இருமல்
- மூச்சு வாங்குதல்
- உடல் சோர்வடைதல்
- வயிறு நோதல்
- வயிறு கழிதல்
    - மலம் எண்ணெய் கசிவானதாக இருக்கும்
    - சீதமாக, இரத்தமாக (அ) இரத்தமும், சீதமும் கலந்து பேதியாதல்
    - பால் போல வெண்ணிறமாக கழிதல்
    - ஊண் கழுவிய தண்ணீர் போல் பேதியாதல்
    - மலவாய் எரிச்சல்
    - மலம் வெட்டையாதல் (மலச்சிக்கல்)
- உச்சியில் குழி விழுதல்
- முகம் சோர்வடைந்து காணுதல்
- குரல் கம்மலாக பேசுதல்
- கை, கால், முகம் வறண்டு காணும்
- அனல் வீசுவது போன்று உட்சுரம் காணல்
- வாய்நாற்றம்
- மார்பு கூம்பு போல் எழும்பி காணல்
- நீர் சுருங்கல்

கணத்தில் ஒன்றுடன் ஒன்று தொடர்புகளற்ற பல குறிகுணங்கள் தொகுப்பாகக் காணப்படுகின்றன. அதனால் கணத்தில் பல நோய் நிலைகள் இருப்பதனை அறியலாம்.

மேலும் பொதுக்குறிகுணங்களை பிரதானமாகக் கொண்டு, கணத்தின் சிறப்பு குணங்களுடன் பொருத்தி (கணத்தின் வகைகள்) நோயினை கணித்தல் சிறப்பானதாகும்.

பிற நூல்களில் காணும் கணத்தின் பொதுகுணங்களை அறிந்து கொள்ளும்போது, நோயினை குறித்த தெளிவான ஒப்புநோக்கு செய்ய முடியும் என்பதால் அதனையும் காண்போம்.

அபிதான சிந்தாமணி கூறும் நோயின் குணங்கள்:

மார்பில் வீக்கம்,உட்சுரம்சுரம்,வறண்ட மலம்

ஜீவரட்சாமிர்தம் கூறும் நோயின் குணங்கள்:

- வாய்நாற்றம்
- தலைசுற்றல்
- உள்சுரம் (அல்லது)
- ஒரு வேளை வெளிசுரம் (அல்லது)
- வயிற்றின் மேல் சுடுதல்
- மயக்கம்&வறண்ட மலம

இக்குணங்கள் சகல கணத்திற்கும் பொதுவாக வரும் என அறிக.

உள்சுரம் குறித்த விளக்கம்:

அகஸ்தியர் சுரநூல் 300 - 'சித்தமருத்துவம் - பொது' பக்கம் 57 - 6ம் பதிப்பு என்ற நூலில் 'சுரமதே கணையதாகும்'' என கூறப்பட்டுள்ளது.

அதன் விளக்கத்தில் குழந்தைகளுக்கு தோன்றுகின்ற என்புசுரம், அழல் சுரம், மாந்தசுரம் போன்றவைகள் குழந்தைகளை வருத்தமடையச் செய்து, பின்னர் கணை நோயினை பிறப்பிக்கும்.

கணம் - சுரம் தொடர்பு :

'கணை நோயில் உட்சுரமாக காயும்''

சித்தமருத்துவம் - பொது

'கணையில் காந்தள் மலர் போன்ற சுரம் காணும்''

மேற்கண்ட மேற்கோள்கள், கணத்தில் சுரத்திற்கும் பிற நோய் நிலைகளில் காணும் சுரத்திற்கும் வேறுபாடு உண்டு என்பதை தெளிவாக கூறுகின்றன.

(காந்தள் மலர் என்பது தீ பூதத்துடன் தொடர்பு கொண்டது. அந்த மலரின் அல்லி இதழ்கள் சுருக்கமானதாக காணும். கணை நோயிலும், தொடர்ந்து உட்சுரம் உள்ள குழந்தைகள் உடல் சோர்வடைந்து காணுவதாக பொது குறிகுணத்தில் குறிப்பிடப்படுவது சிறப்பாகும்).

'உட்சுரம்'' என்பது பிற சுரங்களிலிருந்து வேறுபட்டது. இச்சுரம், உடல் வன்மை குறைந்த பேர்க்கு வெளிக்கு தெரியாமல் உடலின் உள்ளே தகித்து, சுரம் இருப்பது போன்று காணப்பட்டு, சோகம், மனத்தளர்ச்சி, கைகால் ஓய்ச்சல், உணவில் விருப்பமின்மை, வாய்க்குமட்டல், எப்போதும் சுரம் காய்வது போலிருத்தல், உடல் மெலிந்து கொண்டே செல்லுதல் என்னும் குறி குணங்களை பிறப்பிக்கும்.

- சித்தமருத்துவம் பொது .

பாலவாகடம் நூலின்படி நீர்க்கணமாந்தத்தின் குறிகுணங்கள்:

"இருமு மூக்கில் நீர்வடியும்
இடையில் சுரங்காயும்
பொருமி வயிறு இறைச்சலுண்டாம்
போதப் பலவித மாய்க்கழியும்
சொருகுங் கண்ணும் உடம்புமுகம்
சோர்ந்து தலையும் புரட்டலுண்டாம்
மருவி மயக்கம் உண்டாகும்
வருகு நீர்க்கண மாந்தமுமே

-பாலவாகடம் குழந்தை மருத்துவம் pg.- 179

ஆத்மரட்சாமிர்தம் என்னும் வைத்திய சாரங்க நூலின்படி நீர்க்கணமாந்தத்தின் குறிகுணங்கள்:

இருமல் மூக்கில் நீர்வடியும்
இடையில் சுரங்காயும்
பொருமி வயிறு இறைச்சலுண்டாம்
பலவித மாய்க்கழியும்

மயக்கம் உண்டாகும்

கண், உடம்பு, முகம் சோர்ந்து போகும்.

நோய் கணிப்பு: (Diagnosis)

Piniyari muraimai is a method of diagnosing a disease. Siddha system has a very unique method of diagnosis.

"Pini" means = Disease

"Ari" means = Identify

"Muraimai" means = Method.

This is based upon three main principles and Envagai Thervugal. The three main principles are,

1. Poriyal arithal (Inspection)
2. Pulanal arithal (Palpation)
3. Vinathal (Interrogation)

Physician's 'Pori' and 'Pulan' are used as tools for examining the 'Pori Pulan' of the patients. The above principles correspond to the methodology of 1.Inspection, 2.Palpation and, 3.Interrogation in modern medicine, in arriving a clinical diagnosis of the disease.

Poriyaal arithal: (Inspection)

Porigal are considered as the five senses of perception namely,

1. Nose
2. Tongue
3. Eye
4. Skin

5. Ear

Pulanal arithal: (Palpation)

Pulangal are functions of five senses. They are,

1. Smell
2. Taste
3. Vision
4. Sensation of Touch
5. Hearing.

Vinathal: (Interrogation)

Vinathal is asking the information regarding the history of the disease, its clinical feature etc., from the patient or his close relatives who are taking care of him/her.

சித்த மருத்துவத்தின் நோய்கணிப்பில் பின்வரும் காரணிகள் முக்கிய பங்கு வகிக்கின்றன.

நோயாளியைச் சார்ந்தது

1. உயிர் தாதுக்கள் (முக்குற்றம்)
2. உடல் தாதுக்கள் (ஏழு உடற்கட்டுகள்)
3. எண்வகைத் தேர்வு

நோயாளியைச் சாராதது

4. பொழுது

   சிறுபொழுது - வைகறை, விடியல், எற்பாடு, நண்பகல், மாலை, யாமம்

   பெரும்பொழுது - கார், கூதிர், முன்பனி, பின்பனி, இளவேனில், முதுவேனில்

5. ஐவகை நிலங்கள் : குறிஞ்சி, முல்லை, மருதம், நெய்தல், பாலை.

மேற்கூறிய காரணிகளின் மாறுபாடுகளை ஒன்றுடன் ஒன்று ஒப்பிட்டு நோய் கணிக்கப்படுகிறது.

1. உயிர் தாதுக்கள் (முக்குற்றம்)

"நீர்கணமாந்தத்தில் முக்குற்ற விகற்பம்

வாதம், பித்தம், கபம் ஆகிய மூன்று தாதுக்களில் சமச்சீர் நிலையில் உண்டாகும் வேறுபாடுகளை நோயாக உற்பத்தியாகிறது.

(அ) "நடுங்கியதோர் பித்தமது கோபங் கொண்டு

நல்லவாயுவை பற்றி யழுத்திக் கொள்ளும்" - பால வாகடம்

முதலில் பித்ததோடம் பாதிப்படைந்து (தன்னிலை வளர்ச்சி அடைந்து) பின்பு வளிகுற்றத்தின் தொழிலையும் (வேற்றுநிலை வளர்ச்சி அடைந்து) பாதிப்பதாக கொள்ளலாம்.

இதே கருத்தை "மந்தமலாது வாயுவராது" :- என்ற தேரன் சேகரப்பா பாடலால் மந்தத்தினால் வாயு உண்டாகும் என அறியலாம். மேலும் மாந்தம் (மந்தம்) என்பது பித்தத்தின் தன்னிலை வளர்ச்சி குணம் என அறியவேண்டும்.

(ஆ) "ஐயது கூடிற் றென்றால்" - பால வாகடம்

இதன் பொருள் ஐயக்குற்றம் தன்னிலையில் வளர்ச்சி அடைதல் என்பதாகும்

இதே கருத்தை "கபத்தினையன்றி காசசுவாசம் காணாதே" - என்ற தேரன்சேகரப்பா பாடலால் ஐயக்குற்றத்தின் தன்னிலை வளர்ச்சியன்றி கணத்தின் குறிகுணமான காசம், சுவாசம் வராது என அறியலாம். அழல் குற்றம் தன்னவில் மிகுந்து வாயுவை பற்றி அழுத்திக் கொள்ளும். அதனால் உடலில் அதிகப்பட்ட அழல் தணிவதற்கு வழியில்லாமல் குழந்தைக்கு அதிகமாக சூடு உண்டாகி உடல் கனகனப்பு ஏற்படுகின்றது.

2. உடல்தாதுக்களின் நிலை:

உண்டஉணவின் அன்னசாரமானது குடலில் உறிஞ்சப்பட்டு உடற் தாதுக்களான சாரம், செந்நீர், ஊண், கொழுப்பு, என்பு, மூளை, சுக்கிலம் (அ) சுரோணிதம் போன்றவற்றை போடணிக்கின்றது என உடல்தத்துவ நூல்கள் கூறுகின்றன.

"தந்திடு நரம்ப தெல்லாந் தாங்கியே யூணைப் பற்றி

உந்திடு மிரத்தமெல்லா மமுதென வுண்ணு மன்றே"

- பரராசசேகரம் - பாலரோக நிதானம் பாடல்: 269

என்ற பாடலால் கணை நோய் உடல் தாதுக்களை பாதிக்கும் என அறியலாம்.

கணையில் உடல் தாதுக்கள் போடணிக்கப்படுவதிலும், உருவாக்கத்திலும் சிரமம் ஏற்படுகிறது என்பதால் நோய் தீவிரத்திற்கு ஏற்ப அனைத்து தாதுக்களும் (சுக்கில, சுரோணிதம் உள்பட) வரிசையாக ஒன்றன்பின் ஒன்றாக பாதிப்படையும் என கருதப்படுகிறது. சுக்கிலம், சுரோணிதம் இவற்றை நேரடியாக விந்து, நாதம் என்று பொருள் கொள்ளாமல், உடல் செல்கள் மற்றும் உறுப்புகள் தன்னையொத்த உருவப் பெருக்கிற்கு முதலாய் நிற்கும் உடல் தாது என பொருள் கொள்வது சிறப்பாகும்.

3. எண்வகைத் தேர்வுகள்:

பொறி, புலன்களால் அறிதல், வினாதல் போன்றவைகளின் மூலம் மருத்துவர் அறிந்தவற்றை எண்வகைத் தேர்வுகள் மூலம் உறுதிபடுத்த வேண்டும்.

"நாடி ஸ்பரிசம் நா நிறம் மொழி விழி

மலம் மூத்திரமிவை மருத்துவராயுதம்"

- நோய்நாடல் முதல் பாகம்

"தேடிய வியாதிக் கெல்லம் தேகத்தில் பரிட்சையுண்டு

கூடியே நிற்குமெட்டு பரிட்சையாங் கூறக்கேளீர்

நாடியே தொட்டாற் தேகம் மூத்திரம் வார்த்தை கண்கள் நாக்கு

பாடியே மலசலங்கள் பல வண்ணம் பார்த்துக் கொள்ளே

- சித்த மருத்துவமணிகள்

மேற்கூறிய பாடலின் மூலம் நாடி, ஸ்பரிசம், நா, நிறம், மொழி, விழி, மலம், மூத்திரம் ஆகியன மருத்துவரின் ஆயுதம் போன்றவை என அறியலாம்.

1. நாடி

எண்வகைத் தேர்வுகளில் பிரதானமானது. பிணியினை நாடியாலறிந்து மருந்தூட்டுதலே சிறந்தது என்று சித்த மருத்துவம் கூறுகின்றது. ஆனால் குழந்தைகளில் நாடிநடை சரியாக தோன்றாது என்பதை கீழ்கண்ட பாடலால் அறியலாம்.

"கொண்டிடவே கயரோகி காசரோகி

குறிப்பாக சிற்றின்பம் செய்த பேர்கள்

அண்டிடவே தரித்திரர்கள் விருத்தர் பாலர்

கொண்டிடவே இவர்களின் உறுப்பின் தாது

கூறவே முடியாது எவர்க்குக் கிட்டும்."

- நோய்நாடல் நோய் முதல்நாடல் திரட்டு

எனினும் கணத்தில் பித்தகுற்றம் முதன்மையாக பாதித்து பின் வாத, கப குற்றங்களும் பாதிப்பதால், கீழ்கண்ட நாடிநடையானது தேர்வாளரால் பரிசோதித்து எழுதப்பட்டது.

- பித்தகபம்
- பித்தவாதம்
- வாதபித்தம்

2. ஸ்பரிசம்:

நோயாளியினை தொட்டு பார்த்தலின் மூலம் உணரப்படும் குறிகுணங்கள் ஆகும். **நீர்க்கணமாந்த** நோயில் கீழ்க்காணும் குறிகுணங்கள் அவ்வாறு உணரப்பட்டது.

- வயிறுவலி, சுரம், உட்சுரம்

3. **நா**

நோயாளரின் நாக்கினை பார்த்து உணரப்படும் **நீர்க்கணமாந்த** நோயின் குறிகுணங்களாவன.

- செந்நீர்த்தாது குறைந்து காணுதலை, நா வெளிறிட்டு இருத்தலால் அறியலாம்.

4. **நிறம்:**

நீர்க்கணமாந்த நோயில் உடற்கட்டுகள் வன்மை குறைந்துள்ளதை அறிய நிறப்பரிசோதனை பயன்படும்.

தோலின் நிறம் - வெளிறிக்காணுதல்

கறுத்துக்காணுதல்

நா, கண் - வெளிறிக்காணுதல்

5. **மொழி:**

நீர்க்கணமாந்த நோய் குழந்தைகளில் கபம் அதிகரிக்கும் காரணத்தால் குரல்கம்மல் தோன்றி தாழ்ந்து பேசுவர்.

6. **விழி:**

விழிச்சோதனையில், **நீர்க்கணமாந்த** நோயின் கீழ்க்காணும் குறிகுணம் உணரப்பட்டது.

- கீழிமை வெளிறிக்காணுதல்

7. **மலம்:**

நீர்க்கணமாந்த குழந்தைகளில், வினாதலின் மூலம கீழ்கண்ட குறிகுணங்கள்அறியலாம்.

- கழிச்சல்
- மலச்சிக்கல்

8. **மூத்திரம்:**

குழந்தைகளில் பேதி இருந்தால் உடலின் நீர்த்துவம் குறைந்து நீர்வரத்து குறைந்து காணும்.

நீர்க்குறி:

"வந்த நீர் கரியெடை மணம் நுரை எஞ்சலென்

றைந்தியலுளவை யறைகுது முறையே"

- நோய் நாடல் முதல் பாகம்

நீரில் நிறம், மணம், நுரை, எடை, எஞ்சல், ஆகியவற்றை நோக்க வேண்டும்.

நெய்க்குறி:

குழந்தைகளின் நாடிநடை சரியாக கணிப்பதில் சிரமம் உள்ளதால், நெய்க்குறி பரிசோதனை மூலம் நோயாளர் எக்குற்றத்தால் பாதிக்கப்பட்டுள்ளார் என்பதனை கணிக்கலாம்.

கணநோயாளியின் சிறுநீரை சோதனை வட்டிலில் ஊற்றி ஒளி மிகுந்த இடத்தில் நீரின் அலையில்லாத போது நல்லெண்ணெயத்துளி விட்டு பார்க்கப்பட்டது.

சிலரில் ஆழி போல் (மோதிரம்) பரவியும், சிலரில் முத்துபோல் நின்றும் காணப்பட்டது.

"அரவென நீண்டின் வாதம்

ஆழிபோற் பரவின் பித்தம்

முத்தொத்து நிற்கின் மொழிவதென் கபமே"

- நோய் நாடல் முதல் பாகம்

மருத்துவம்

1. வேற்றுநிலை வளர்ச்சியடைந்த பித்தத்தினை தன்னிலைப்படுத்த வேண்டும்
2. தன்னிலை வளர்ச்சியடைந்த ஐயத்தினை சமப்படுத்த வேண்டும்
3. பித்தகுற்றத்தால் பாதிப்படைந்துள்ள வாதத்தினையும் சரிப்படுத்த வேண்டும்.
4. வன்மை இழந்த உடற்கட்டுகளை வன்மை அடையச்செய்யும் வகையில் மருந்தளிக்க வேண்டும்.

Keeping in mind the need for bringing out an effective therapy for ***Neerkanamantham*** from Siddha system of Medicine, I have undergone this dissertation work with ***sirupulladi ennai.***

The dosage of medicines for the children of age 3 to 7 years is 1.6 ml (b.d)

Line of Treatment:

Siddha treatment is not only for complete healing but also prevention and rejuvenation. Saint Thiruvalluvar says about physician's duty, study the disease, study the cause, treat subsiding way and do what is proper and effect.

"நோய் நாடி நோய் முதல் நாடி அது தணிக்கும்
வாய்நாடி வாய்ப்பச் செயல்".

"உற்றான ளவும் பிணியளவுங் காலமுங்
கற்றான் கருதிச் செயல்".

- திருக்குறள்

So it is essential to know the disease, the etiology, the nature of patients, severity of the illness, the seasons and the time of occurrence.

Line of treatment is as follows.

1. Kaappu (Prevention)
2. Neekkam (Treatment)
3. Niraivu (Restoration)

Kaappu (Prevention):

Prevention and cure of the diseases are the basic principle of any medical system, but prevention is the main aim of Siddha system. Siddhars have described general preventive measures and special measures. (Which are applicable to diseases of certain organs)

And especially in Balavagadam, the preventive measures are explained in detail. Prevention of the disease of the child starts from the conception and goes on as the child grows up in intra uterine life and after delivery. Siddhars have dealt elaborately with the diet of pregnant women, her habit, the medicine to be taken in every month, her psychological conditions, and surroundings etc.

Neekam: (Treatment)

The aim of treatment is based on,

To bring the three thodams into normal equilibrium state, emetics and purgatives are given. But considering physical condition of the children administration of purgatives and emetics is excluded from line of treatment.

Niraivu: (Restoration)

1. Reassurance of disease recovery was given to all patients.
2. All the patients are advised to follow the life style that provides a disease free life.

Pathiyam (Diet):

During the course of treatment, the drug is administered to the patients according to the nature of disease and the patients were advised to follow certain restrictions regarding diet and physical activities.

This type of medical advice in siddha system of medicine is termed as "Pathiyam".

Importance of pathiyam is quoted as follows.

'பத்தியத்தினாலே பலனுண்டாகும் மருந்து
பத்தியங்கள் போனால் பலன் போகும் - பத்தியத்தில்
பத்தியமே வெற்றிதரும் பண்டிதர்க்கு ஆதலினால்
பத்தியமே உத்தியென்று பார்'' - தேரையர் வெண்பா

The patient with Neerkanamantham are advised to avoid cool drinks, cold water and exposure to chill weather and allergens (dust, psollens, and odours)

During the course of treatment according to the drug administered to the patients and nature of the disease, the patients were advised to follow certain precautions regarding diet and physical activities. This type of medical advice in Siddha system of medicine is termed as **Pathiyam.**

Siddhars advice regarding the diet regimen for Kaba patients is explained below:

கத்தரி

பேய்புடல்

பாகல்

களா

அத்திக்காய்

பீர்க்கங்காய்

கதலித் தண்டு

முள்ளங்கி

‘‘கத்தரி பேய்புடல் வரை யிருபாகல் பருங்களா கண்டகாரி

அத்திக் காய்களும் வருக்கைமாபயற்றை கரையால் பீர்க்கரும் - பிஞ்சுவேர்

மொய்த்த சூரணங் கதலித் தண்டுகளைப் பூமுளங்கி முருக்கரும்பும்

அத்திப் பூசினிக் காயருள்ளி வள்ளியுங் கபத்தோர்க் காணமாமே’’

‘வேளை மணத்தக்காளி மென் சீதை சக்ரவர்த்தி

பீளை வசலை சுக்கு பெண்சுணங்கள் - வேளையிலை

செந்தளிர் களைக் கீரை செய்வர் கபதேகர் நிதம்

வந்தனியுணத்தான் மகிழ்ந்து’’.

-பதார்த்தகுண சிந்தாமணி

Prevention methods:

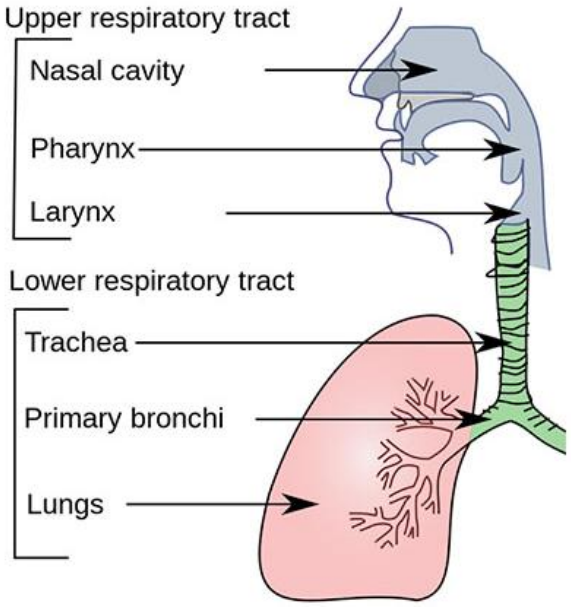
The patients were advised,

- To find out which agent makes allergy and avoid them.
- To avoid contaminated food and water and avoid cold weather.
- To avoid cold food stuffs, beverages etc &To take highly nutritious diet
- like vegetable soups to get their immunity developed

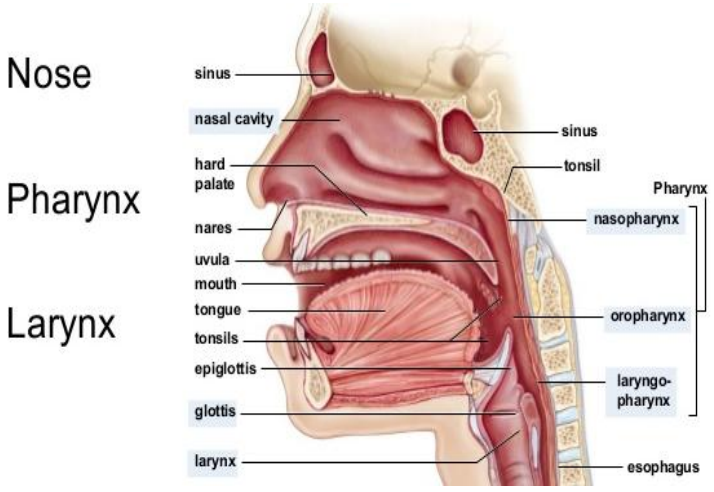
MORDERN REVIEW

3.2 MODERN ASPECTS

The Respiratory tract is divided into the Upper respiratory tract and Lower respiratory tract. Upper respiratory tract includes the nose and nasal passages, para nasal sinuses, the pharynx, and the portion of the larynx above the vocal cords. Lower respiratory tract includes the portion of the larynx below the vocal cords, trachea, bronchi and bronchioles, alveolar sacs and alveoli. The lungs can be included in the lower respiratory tract.



Anatomy of the Upper Respiratory Tract:



Nasal Cavity:

It form the main external opening for the respiratory system and are the first section of the body's airway the respiratory tract through which air moves. The nose is a structure of the face made of cartilage, bone, muscle, and skin that supports and protects the anterior portion of the nasal cavity.

Most of the nose is concerned with filtering and providing a passage for air on its way to the lungs. The walls of the nasal cavity enable both these functions. In particular, the nasal conchae are filled with mucosal respiratory membranes coated in cilia-tiny hair-like cells that act to move waves of mucus toward the throat. These protections trap inhaled bacteria, dirt, viruses, and chemical particles in the mucus. The cilia and swallowing action then serve to sweep the allergens and infectious agents into the back of and down the throat for destruction (digestion) in the stomach.

These olfactory sense organs are located beneath the bridge of the nose atop the nasal cavity. These organs, the olfactory membranes, are to be found in two clefts there and can be identified as a small grey or yellow patch of tissue.

Para Nasal Sinuses:

The sinuses of the face, sometimes called the para nasal sinuses, are air pockets within the bones of the skull located behind and beside the nose, cheeks, and eye sockets.

Pharynx:

The pharynx, also known as the throat, is a muscular funnel that extends from the posterior end of the nasal cavity to the superior end of the esophagus and larynx. The pharynx is divided into 3 regions: the nasopharynx, oropharynx, and laryngopharynx.

Naso Pharynx:

The Naso pharynx is located above the soft palate. It communicates with the nasal cavity and provides a passageway for air during breathing. The eustachian tubes, which connect the pharynx with the middle ears, open through the walls of the Naso pharynx.

Oropharynx:

The oropharynx, or pharynx, is a passage that connects the back of the mouth and the nose to the esophagus. This muscular tube, which is lined with mucous membranes, is a part of the respiratory and the digestive systems. The top section of the pharynx is an air passage that connects the nasal cavity to the region behind the soft palate of the mouth. The middle section is a passage for both air and food and ends below the tongue. The lowest section is for food only and lies behind and to each side of the larynx, or voice box, merging with the esophagus. The average person breathes in about 13 million cubic feet of air in a lifetime. The air coming from a sneeze may reach a speed of 100 miles per hour.

Laryngopharynx:

The laryngopharynx is where both food and air pass. It can be found between the hyoid bone and the larynx and esophagus, which helps guide food and air where to go. It is a part of the pharynx. A smooth mucous membrane covers the side and back walls. At the back of the larynx, the anterior wall of the laryngopharynx exists.

Epiglottis:

The epiglottis is a flap of elastic cartilage that acts as a switch between the trachea and the esophagus. Because the pharynx is also used to swallow food, the epiglottis ensures that air passes into the trachea by covering the opening to the esophagus.

Larynx:

Larynx is a tough, flexible segment of the respiratory tract connecting the pharynx to the trachea in the neck. It plays a vital role in the respiratory tract by allowing air to pass through

it while keeping food and drink from blocking the airway. The larynx is also the body's "voice box" as it contains the vocal folds that produce the sounds of speech and singing.

The Upper respiratory tract includes the nasal passages sinuses pharynx, larynx, which serves as gateways to the trachea, bronchi, and pulmonary alveolar spaces. URTI range from common cold typically a mild self limited cattarhal syndrome of nasopharnyx to life threatening illnesses such as epiglottis. Viruses account for most URIs. Bacteria primary infection or super infection also causes URTIs.

Upper Respiratory Tract Infection Causing organisms:

The various infection causing organisms in upper respiratory tract are as follows

- Rhinoviruses
- Influenza viruses
- Parainfluenza viruses
- Respiratory syncytial virus
- Streptococcus
- Haemophilusinfluenzae

UPPER RESPIRATORY TRACT INFECTION

The various diseases that are categorized under upper respiratory tract infections are

- Common Cold
- Sinusitis
- Rhinitis
- Adenoid
- Tonsil Hypertrophy
- Pharyngitis
- Laryngitis

1. COMMON COLD (ACUTE NASOPHARYNGITIS**)**

The common cold (redirected from *Acute viral nasopharyngitis*) is a viral infection of the upper respiratory system, including the nose, throat, sinuses, eustachian tubes, trachea, larynx and bronchial tubes. Although more than 200 different viruses can cause a cold, 30-50% is caused by a group known as rhinoviruses. Almostall colds clear up in less than two weeks with out complications.Children may have up to 12 colds per year.

Description

Colds, some times called rhinovirus or coronavirus infections, are the most common illness to strike any part of the body. It is estimated that the average person has more than 50 colds during a lifetime. Anyone can get a cold, although preschool and grade school children catch them morefrequently than adolescents and adults. Repeated exposure to viruses causing colds creates partial immunity. Treating symptoms of the commoncold has given rise to amulti-million dollar industry in over-the-counter medications.

Cold season begins in early autumn and extends through early spring. Although it is not true that getting wet or being in a draft causes a cold (a person has to come in contact with the virus to catch a cold), certain conditions may lead to increased susceptibility.

These include:

- fatigue and overwork
- emotional stress
- poor nutrition
- smoking
- living or working in crowded conditions

Colds make the upper respiratory system less resistant to bacterial infection. Secondary bacterial infection may lead to middle ear infection, bronchitis, pneumonia, sinus infection, or

strepthroat. People with chronic lung disease, asthma, diabetes, or a weakened immunesystem are more likely to develop these complications.

Causes and symptoms

Colds are caused by more than 200 different viruses. The most common groups are rhinoviruses and coronaviruses. Different groups of viruses are more infectious at different seasons of the year, but knowing the exact virus causing the cold is not important in treatment.

People with colds are contagious during the first two to four days of the infection. Colds pass from person to person in several ways. When an infected person coughs, sneezes, or speaks, tiny fluid droplets containing the virus are expelled. If these are breathed in by other people, the virus may establish itself in their noses and airways.

The common cold is characterized by rhinorrhea, sore throat, cough, fever, malaise, often a lingering mucopurulent nasal discharge,mild diarrhea.

Sinusitis

Sinusitis is an inflammation of the sinuses that can be caused by viruses, bacteria, fungi, allergies, or even an autoimmune reaction.

Behind the bones of the face there are hollow spaces filled with air; these lead to the nose cavity and are called the sinuses. Sinuses have the same mucous membrane lining as the nose. The membrane produces a slimy secretion (mucus), keeping the nasal passages moist. The mucus traps dirt particles and germs. Sinusitis is an inflammation of the paranasal sinuses. The inflammation could be caused by a virus, bacteria, or fungus. The infection may also be the result of an allergic or autoimmune reaction - when the immune system attacks

healthy cells. It is often referred as rhino sinusitis, because an inflammation of the sinuses nearly always occurs with inflammation of the nose (rhinitis).

Types:

- Acute, which lasts up to 4 weeks
- Subacute, which lasts 4 to 12 weeks
- Chronic, which lasts more than 12 weeks and can continue for months or even years

Acute sinusitis

Acute sinusitis is most often caused by the common cold, which is a mild infection caused by a virus. In the majority of cases, home remedies are suitable treatments. However, if the sinusitis continues, it can lead to serious infections and complications.

Typically, with acute sinusitis, the patient's sinuses become inflamed and swollen. This stops the drainage and causes a build-up of mucus

Acute sinusitis signs and symptoms

- Facial pain and pressure
- Blocked nose
- Nasal discharge
- Poor sense of smell
- Congestion
- Cough

Subacute sinusitis

This type of sinusitis refers to an acute sinusitis that has not got better. Symptoms will be similar to acute sinusitis, possibly less severe.

Chronic sinusitis

Chronic sinusitis is usually caused by an infection. However, it can also be caused by nasal polyps (growths in the sinuses), as well as a deviated septum.

As with acute and sub-acute sinusitis, the sinuses become inflamed and swollen, causing blockage and mucus build up. The patient may find it hard to breathe through the nose and might experience facial pain and a headache.

Chronic sinusitis signs and symptoms

The following signs and symptoms may have been present for at least 8 weeks:

- Congested, puffy face
- Blocked nose
- Nasal cavity has pus
- A high temperature (fever)
- Nasal discharge

Rhinitis

Rhinitis is inflammation and swelling of the mucous membrane of the nose, characterized by a runny nose and stuffiness and usually caused by the common cold or a seasonal allergy.

Rhinitis is classified as allergic or nonallergic. The cause of nonallergic rhinitis is usually a viral infection, although irritants can cause it. The nose is the most commonly infected part of the upper airways.

Allergic Rhinitis

Allergic rhinitis is caused by a reaction of the body's immune system to an environmental trigger. The most common environmental triggers include dust, molds, pollens, grasses, trees, and animals. Both seasonal allergies and year-round allergies can cause allergic rhinitis.

Symptoms of allergic rhinitis include itching, sneezing, runny nose, stuffiness, and itchy, watery eyes. People may have headaches and swollen eyelids and also may cough and wheeze.

A doctor may diagnose allergic rhinitis based on a person's history of symptoms. Often, the person has a family history of allergies. More detailed information may be obtained from blood tests or skin testing.

Nonallergic Rhinitis

Non allergic Rhinitis is further classified in to acute viral rhinitis, chronic rhinitis, atrophic rhinitis, vasomotor rhinitis.

Acute viral rhinitis

Acute viral rhinitis can be caused by a variety of viruses, usually the common cold.Symptoms consist of runny nose, sneezing, congestion, postnasal drip, cough, and a low-grade fever. Stuffiness can be relieved by taking decongestants, such as oxymetazoline or phenylephrine as a nasal spray or pseudoephedrine by mouth. These drugs, available over the counter, cause the blood vessels of the nasal mucous membrane to narrow (constrict). Nasal sprays should be used for only 3 or 4 days because after that period of time when the effects of the drugs wear off, the mucous membrane often swells even more than before. This phenomenon is called rebound congestion. Antihistamines help control runny nose but cause drowsiness and other problems, especially in older people. Antibiotics are not effective for acute viral rhinitis.

Chronic rhinitis

Chronic rhinitis is usually an extension of rhinitis caused by inflammation or a viral infection. However, it also may rarely occur with diseases. These diseases include syphilis, tuberculosis, rhinoscleroma (a skin disease characterized by very hard, flattened tissues that

first appear on the nose), rhinosporidiosis (an infection in the nose characterized by bleeding polyps), leishmaniasis, blastomycosis, histoplasmosis, and leprosy—all of which are characterized by the formation of inflamed lesions (granulomas) and the destruction of soft tissue, cartilage, and bone. Both low humidity and airborne irritants also can result in chronic rhinitis.

Chronic rhinitis causes nasal obstruction and, in severe cases, crusting, frequent bleeding, and thick, foul-smelling, pus-filled discharge from the nose.

Decongestants may relieve symptoms. Any underlying infection requires a culture (examination of microorganisms grown from a sample of mucus to identify infection with bacteria or fungi) or biopsy (removal of a tissue sample for identification under a microscope) and appropriate treatment.

Atrophic rhinitis

Atrophic rhinitis is a form of chronic rhinitis in which the mucous membrane thins (atrophies) and hardens, causing the nasal passages to widen (dilate) and dry out. This atrophy often occurs in older people. People who have granulomatosis with polyangiitis (formerly called Wegener granulomatosis) are also at risk. The cells normally found in the mucous membrane of the nose cells that secrete mucus and have hairlike projections to move dirt particles out are replaced by cells like those normally found in the skin. The disorder can develop in people who had a significant amount of intranasal structures and mucous membranes removed during sinus surgery. A prolonged bacterial infection of the lining of the nose is also a factor.

Crusts form inside the nose, and an offensive odor develops. People may have recurring severe nosebleeds and can lose their sense of smell (anosmia).

Treatment is aimed at reducing the crusting, eliminating the odor, and reducing infections. Antibiotics, such as bacitracin or mupirocin ointment applied inside the nose, kill bacteria. Estrogens sprayed into the nose or taken by mouth and vitamins A and D taken by mouth may reduce crusting by promoting mucosal secretions.

Vasomotor rhinitis

Vasomotor rhinitis is a form of chronic rhinitis. Nasal stuffiness, sneezing, and runny nose common allergic symptoms occur when allergies do not seem to be present. In some people, the nose reacts strongly to irritants (such as dust and pollen), perfumes, pollution, or spicy foods. The disorder comes and goes and is worsened by dry air. The swollen mucous membrane varies from bright red to purple. Sometimes, people also have slight inflammation of the sinuses. People do not have a pus-filled discharge or crusting.

Treatment of vasomotor rhinitis is by trial and error and is not always satisfactory. If inflammation of the sinus is not severe, treatment is aimed at relieving symptoms. Avoiding smoke and irritants and using a humidified central heating system or vaporizer to increase humidity may be beneficial. Nasal corticosteroid and antihistamine sprays sometimes help. Nasal decongestant sprays should not be used. However, decongestants taken by mouth may be used for a few days at a time when symptoms are worst.

Adenoid and Tonsil Hypertrophy

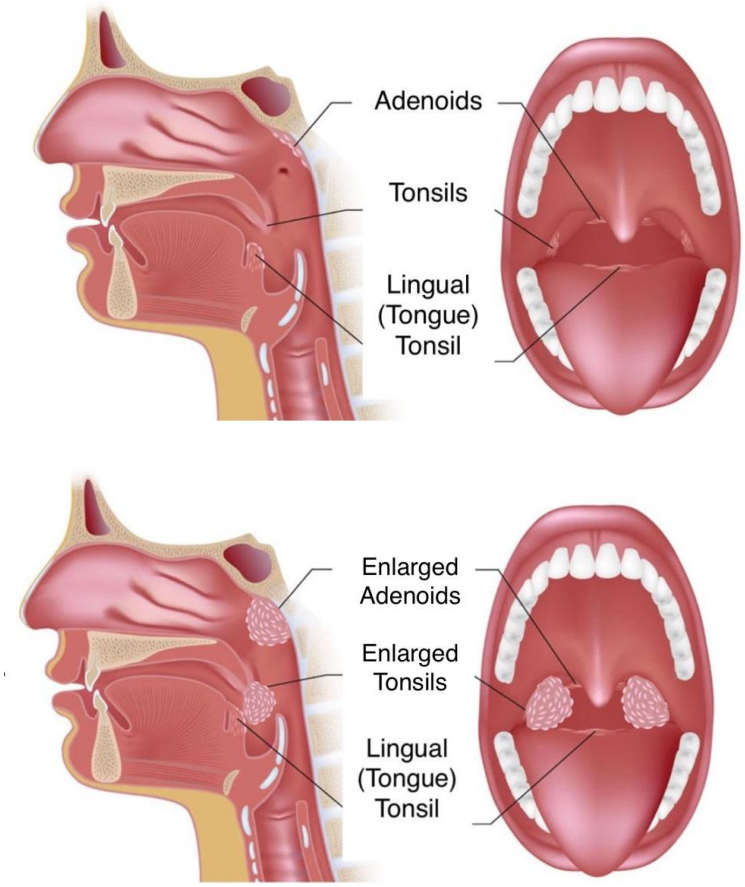
Tonsil hypertrophy and adenoid hypertrophy occurs when the tonsils and the adenoids become swollen and chronically enlarged. The condition can result in nasal obstruction leading to a number of symptoms and complications. Tonsil hypertrophy and adenoid hypertrophy are medical conditions that occasionally occur in adults but most commonly affect younger children.

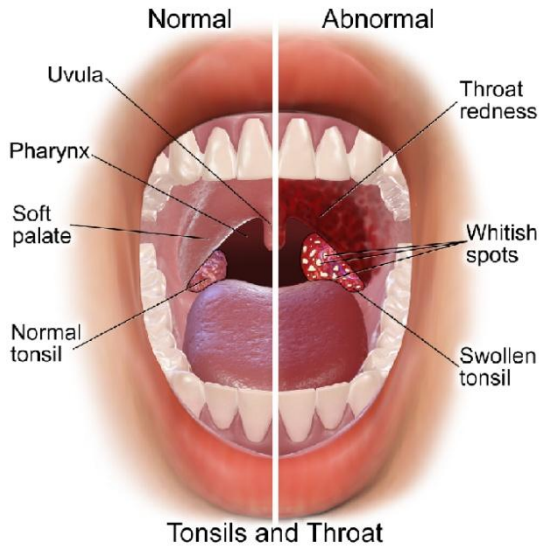
Both tonsils and adenoids are collections of lymphoid tissue that trap bacteria and viruses. They are part of the lymphatic system and help the body fight infections. The tonsils are located in the back of the throat and are visible through the mouth. The adenoids are located higher up and further back where the nasal passages connect with the throat. Unlike tonsils, adenoids are positioned behind the soft palate and cannot been seen through the mouth. The main function of the tonsils and adenoids is to prevent bacteria from reaching further down the throat by producing antibodies that bind to the bacteria. The adenoids and tonsils can progressively grow with ongoing infections and inflammation.

Tonsil Hypertrophy

Symptoms of Tonsil Hypertrophy

Enlarged tonsils can be common in children, and in some cases, there are no apparent symptoms. However, when tonsil hypertrophy is more severe, children typically experience some of the following symptoms:





- Voice changes: As a result of swollen tissue near the vocal chords, the voice may be altered slightly.
- Difficulty swallowing: The enlarged tissue of the tonsils can become obstructive and make swallowing certain foods difficult.
- Loss of appetite: When swallowing food is difficult or painful, many children eat less and lose their appetite.
- Halitosis: Due to infections of the tonsils, bad breath often affects children with tonsil hypertrophy.
- Snoring: Hypertrophic tonsils can obstruct the airways making breathing during sleep more difficult.
- Obstructive sleep apnea: In severe cases of tonsil hypertrophy, sleep apnea, a condition indicated by pauses in breathing during sleep, can occur. This is due to blocked airways. Sleep apnea is a serious condition that can potentially cause pulmonary hypertension and hypertrophy of the right side of the heart.

- Frequent ear infections: The enlarged tonsils can block the Eustachian tubes and impede drainage. This can result in fluid build up behind the eardrum and ear infections.
- Chronic Sinusitis: Hypertrophic tonsils and surrounding tissue can prevent proper drainage from the sinus cavities. The mucous becomes trapped and infections can develop. Symptoms such as congestion, pressure and fatigue are common with sinusitis.

Causes of Tonsil Hypertrophy

The exact cause of tonsil hypertrophy is not always clear, but the enlargement is typically related to tonsillitis or infection of the tonsils and surrounding tissue. The bacteria trapped by the tonsils can sometimes lead to infections. It is possible that irritants such as second hand smoke and air pollution can also cause the tonsils to become enlarged.

Treatments for Tonsil Hypertrophy

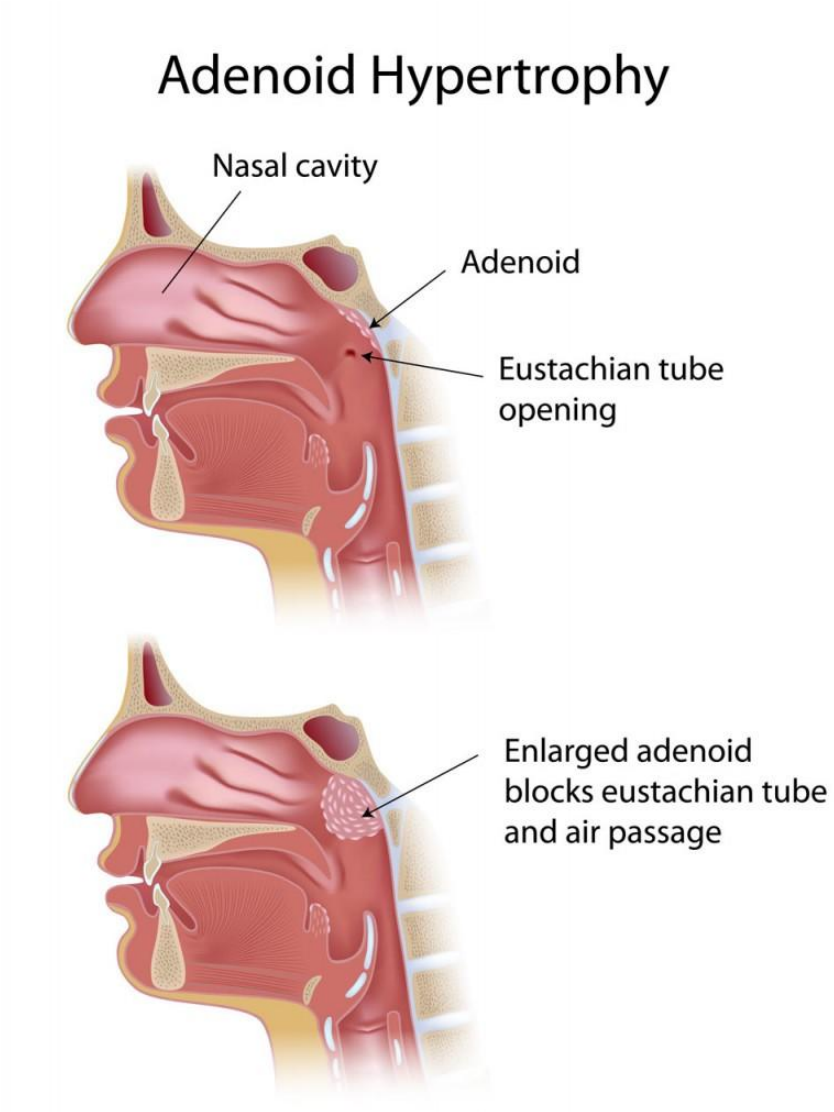
Treatment for tonsil hypertrophy depends on the size of the tonsils and the severity of symptoms. Sometimes the enlarged tissue shrinks on its own or as the child grows, and no treatment is needed. If severe tonsil hypertrophy is not treated however, serious health conditions can result. Underlying infections can spread to other areas of the body, and untreated streptococcus bacteria (strep throat) can even damage the kidneys and heart valves.

Both medication and surgery are used to treat tonsil hypertrophy. When infection is the cause of tonsil hypertrophy, antibiotics can be effective. Once the infection is cleared, the enlarged tonsil tissue typically returns to normal size. When the tonsils are chronically enlarged, surgery may be the best treatment option. The tonsils can be removed through a surgical procedure known as a tonsillectomy.

Adenoid Hypertrophy

Symptoms of Adenoid Hypertrophy

The symptoms of adenoid hypertrophy can be similar to those of tonsil hypertrophy and occur when the enlarged adenoid tissue creates as an obstruction:



- Mouth breathing: As a result of blocked nasal airways, children with adenoid hypertrophy are often forced to breath through their mouths. If mouth breathing occurs for a prolonged period of time, orthodontic issues can arise.

- Runny nose: Because mucous cannot drain properly through the back of the nasal cavity, mucous and secretions exit through the nostrils.
- Snoring and sleep apnea: The blocked airways caused by the enlarged adenoid tissue can interfere with breathing during sleep.
- Chronic sinusitis: When enlarged adenoids block the nasal passages, the sinus cavities cannot drain properly. The buildup of mucous leads to inflammation of the lining and often infections.
- Eustachian tube dysfunction: When enlarged adenoids prevent proper drainage from the Eustachian tubes, fluid collects behind the eardrum.

Causes and Diagnosis of Adenoid Hypertrophy

Like tonsil hypertrophy, the cause of adenoid hypertrophy is not completely clear. Bacteria, irritation from nasal secretions or chronic allergies can cause inflammation of the adenoid tissue. This inflammation can lead to chronic adenoid hypertrophy. An ENT (Ear, Nose and Throat) specialist can diagnose hypertrophic adenoids by using x-ray or by performing a fiberoptic nasal exam. With a fiberoptic nasal exam, a nasal spray is first used to numb the nasal passages. Then, inserting a flexible, fiberoptic tube through the nose, the ENT can view and examine the adenoids directly.

Treatment of Adenoid Hypertrophy

In some cases, medication can be used to treat adenoid hypertrophy. Infected adenoids may respond to antibiotics and adenoids may shrink with oral steroids. When medication does not correct the enlargement of the adenoid tissue, surgery is often needed.

4. Pharyngitis

Pharyngitis is caused by inflammation and swelling of pharyngeal mucosa. The main symptom of acute pharyngitis is a sore throat. Other symptoms may include fever, headache, joint pain and muscle aches, skin rashes, and swollen lymph nodes in the neck. Inspection

discloses pharyngeal erythema, exudates, sometimes mucosal erosions and vesicles, tonsillar hypertrophy, anterior cervical lymphadenopathy, conjunctivitis, and skin rash. Similar to other upper respiratory infections, the most common cause of acute pharyngitis is viral infection. The most common pathogens are rhinovirus, and influenza A and B. Some other viruses can cause specific forms of pharyngitis, such as enteroviruses, Epstein-Barr virus (EBV), and HIV.

Less commonly, pharyngitis is also caused by a bacterial infection. Acute bacterial pharyngitis and tonsillopharyngitis usually occur during the colder months. The most common cause is group A b-hemolytic Streptococcus (S. pyogenes), which is responsible for 15–30% of all cases of pharyngitis in children and for 10% in adults. Antibiotic therapy is recommended to hasten the resolution of clinical symptoms, and to prevent the occurrence of nonsuppurative complications, such as rheumatic fever. A 10-day course of antibiotic therapy with penicillin is the standard of care for streptococcal tonsillopharyngitis.

Symptoms of Pharyngitis

Symptoms of pharyngitis may include the following:

- Sore throat
- Fever
- Headache
- Joint pain and muscle aches
- Skin rashes
- Swollen lymph glands in the neck

Diagnosis of Pharyngitis

A blood test might be done to determine whether an infection is more likely caused by a bacterial or viral agent.

Treatment

If sore throat is caused by a virus, antibiotics won't help and it will go away on its own within five to seven days.However, antibiotics can help if your sore throat is caused by bacteria.

5. Laryngitis

Laryngitis is an acute or chronic inflammation of laryngeal structures. It is an illness whereby the larynx becomes swollen and inflamed. It can be an acute (short-term) or chronic (long-term) condition, although in most cases, the condition is temporary and has no serious consequences.

The larynx, also referred to as the voice box, is the area of the throat that is home to the vocal cords- two small folds of mucous membrane covering cartilage and muscle that vibrate to produce sound. The larynx is used in the processes of breathing, swallowing, and talking.

Laryngitis can be caused by:

- Viral infections
- Bacterial infections
- Fungal infections

Symptoms of laryngitis

The most common symptoms of laryngitis include:

- weakened voice
- loss of voice
- hoarse, dry throat
- constant tickling or minor throat irritation
- dry cough

These symptoms are usually mild and can be treated water or other non-caffeinated fluids can help lubricate your throat.

Tests and by giving your voice a break. Drinking

Diagnosis

Laryngitis is typically diagnosed through a physical examination that assesses the patient's ears, nose, throat, and voice. No additional testing is required for most diagnoses.

The most common symptom of the condition is hoarseness, so doctors will take care to listen to the patient's voice. They may also ask questions about lifestyle, potential exposure to airborne irritants, and other related diseases.

If a patient presents with chronic hoarseness, a doctor may recommend additional testing to fully examine the vocal cords. A laryngoscope can be used to observe the motion of the vocal cords when in use and to determine the presence of any polyps or nodules on the vocal cords. A biopsy can be carried out if a suspicious area of tissue requires further assessment.

Anyone who has symptoms that last longer than 2 weeks should consult their physician. In some cases, a doctor may refer a patient to an otolaryngologist - an ear, nose, and throat (ENT) specialist.

Treatments for laryngitis

Cases of acute laryngitis are often best treated with rest, home, and self-care measures that can relieve symptoms. In this case, rest means limiting use of the larynx by reducing or refraining from talking, singing, or otherwise making noises that use the voice box. Whispering should also be avoided as this requires that the vocal cords are tightly stretched, hampering their recovery.

Diagnostic Tests for Upper Respiratory Tract Infections

- Complete blood count
- Total count and differential count
- Erythrocyte sedimentation rate

- Absolute eosinophil count (AEC)
- Radiograph of paranasal sinuses
- Temperature
- Gramstain for pathogens
- IgE levels

Diet

- Fluid intake: Increased fluids are warranted to replace insensible losses and reduced oral intake.
- Probiotics: Antibiotics alter the gastrointestinal flora, and some foods may not be as digestible for days or weeks after antibiotics are used. Consumption of yogurt containing active cultures has been advocated as an aid to restoring normal flora after antibiotic therapy. .

Treatment

- Anti tussive
- Antibiotics
- Anti-virals

Prevention

- Wash the hands frequently, especially after touching public surfaces like doorknobs and frequently wash toys, pacifiers, and other items that children tend to put in their mouths.

DRUG REVIEW

4. DRUG REVIEW

சிறுபுள்ளடி எண்ணெய் SIRUPULLADI ENNAI

சிறுபுள்ளடியும் கழற்கொழுந்தும்
சிறந்தஅவுரி சாணாக்கி
நறுமென் பொடுதலை ஒருபிடியும்
நைய நறுக்கி நல்லெண்ணெய்
நிறுமுன் அரையாய்க் கதிரொன்முன்
நேரே வைத்து நீயருந்த
நறுமென் குழலாய் மேல்பூச
நாத னருளால் கணந்தீரும். – குழந்தை மருத்துவம் (பால வாகடம்)

Ingredients of the Trial Drug

1. Desmodium triflorum (Sirupulladi leaf)
2. Caesalpinia bonduc (Kalarchi kolundhu)
3. Indigofera tinctoria (Avuri leaf)
4. Ipomoea Marginata (Saanaki leaf)
5. Phyla nodiflora (Poduthalai leaf)
6. Sesamum indicum (Nallennai)

1. சிறுபுள்ளடி இலை (Desmodium triflorum)

செய்கை:

பாற்பெருக்கி
அகட்டுவாய்வகற்றிஇ சிறுநீர்ப்பெருக்கிஇ உரமாக்கி

பொதுகுணம்:

மாந்தகணம் போராமம் வன்மந்தம் நீங்கிவிடும்
ஓய்ந்தமுலைப்பாலும் ஒழுகுங்காண்- மோந்தே
சிறுபுள் ளடிதுதையாத் தேமலர்ப்பூங் கோதாய் !
சிறுபுள் ளடியைநிதஞ் சேர்.

-அகத்தியர் குணவாகடம்

பொருள்:

மாந்தம், கணம், கழிச்சல் அடக்கும். பாலைச்சுரப்பிக்கும், வலியைப் போக்கும்.

Scientific classification

Binomial name	:	*Desmodium triflorum*
Kingdom	:	Plantae
Order	:	Fabales
Family	:	Fabaceae
Genus	:	*Desmodium*
Species	:	*D. Triflorum*

Desmodium triflorum is a much branched, mat-forming, prostrate, annual to perennial herb, producing stems 8 - 50 cm long from a woody taproot. It behaves as perennial under conditions of well-distributed rainfall, and is an annual where the rainfall is seasonal. The stems are strongly branched and frequently root at the nodes. The plant is gathered from the wild for local medicinal use. The plant is antipyretic, antiseptic, expectorant. A decoction is commonly used to treat diarrhoea and dysentery; and to quench thirst. A decoction is used as a mouthwash; and the crushed plant, or a poultice of the leaves, is applied externally on wounds, ulcers, and for skin problems in general.The whole plant is used medicinally for inducing sweat and promoting digestion.

Chemical constituents:

Leaves contain β-phenylamine (major), indole-3-acetic acid, tyramine, trigonelline, hypaphorine, its methyl ester, N, N-dimethyl tryptophan methyl ester and S-***l***-stachydrine. Roots contain 3, 4-di-hydroxy phenylethyl trimethyl ammonium cation, choline and betaine. Root also contains an alkaloid hypaphorine.

Medicinal uses:

Whole plant astringent, laxa tive, antipyretic, expectorant, antiseptic, used on skin rashes, wounds and abscesses and for inducing sweat and promoting digestion; tender parts chewed to treat toothache; fresh juice of the plant given to children for coughs; plant juice used as ear drops to alleviate earache and also given as galactagogue; of, mixed with plant of Desmodiumtriflorum , leaves of Kadsurascandens and fruits of Litseacubeba, drunk to treat measles, pox in small children. Roots decoction for colic; root juice dropped in eye to treat inflammation.

Leaves to treat diarrhea and dysentery, convulsions, wounds and abscesses fresh leaves used internally as a galactagogue, applied to wounds and abscesses; young leav es chewed for toothache; a paste of bruised leaves applied to itches, nails and indolent sores; leaf juice applied for cuts, wounds and piles. Fresh leaves—used internally as galactagogue and for diarrhoea; applied externally to wounds and abscesses. Root—diuretic. Also used for cough, asthma.

Article on anti-inflammatory activities of Desmodiumtriflorum:

Desmodiumtriflorum is a plant belongs to the family Fabaceae. It is a global species native to tropical regions and introduced to subtropical regions including the southern United States. The plant is having antipyretic, antiseptic, expectorant properties. A decoction is commonly used to treat diarrhoea and dysentery; quench thirst; and as mouthwash. The crushed plant, or a poultice of the leaves, is applied externally on wounds, ulcers, and for skin problems. In general the whole plant is used medicinally for inducing sweat and promoting digestion, anti-oxidant, anti-inflammatory, anti-convulsant and anti-bacterial actions. This review explains the different pharmacological activities of Desmodiumtriflorum.

2. கழற்சி கொழுந்து (Caesalpinia bonduc)

செய்கை:

வீக்கமுருக்கி

ருதுவுண்டாக்கி

பொதுகுணம்:

விரைவாதஞ் சூலையறும் வெட்டையன லேகும்

நிரைசேர்ந்த குன்மம் நிலையா- துரைசேர்

அழற்சி விலகும் அருந்திற் கசப்பாங்

கழற்சியிலை யென்றுரைக்குங் கால்.

-அகத்தியர் குணவாகடம்

பொருள்: கருங்கழற்சி இலையால், அண்டவாயு, சூலைக்கட்டு, வெள்ளை, பலவித குன்மம், உள்ளழலை ஆகியவை ஒழியும்.

பொதுகுணம்:

ஏறண்டத் தோடே யிறங்கண்ட மெத்தவுமே

வீறண்ட மெல்லாம் விலக்குங்காண்- தூரண்ட

வள்ளைக் குழையடிபோம் வாள்விழிமாதே ! நல்ல

வெள்ளைக்- கழற்சியிலை விள்.

-அகத்தியர் குணவாகடம்

பொருள்:

வெண்கழற்சி இலையால், ஏறண்டம், இறங்கண்டம், தசையண்டம் இவை போம்

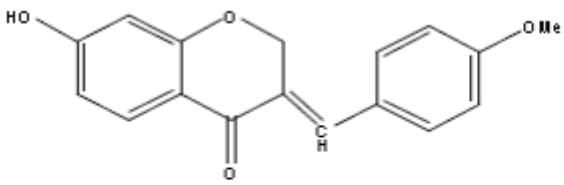
Scientific classification

Binomial name	:	*Caesalpinia bonduc*
Kingdom	:	Plantae
Family	:	Caesalpiniaceae
Genus	:	*Caesalpinia*
Species	:	*C. Bonduc*

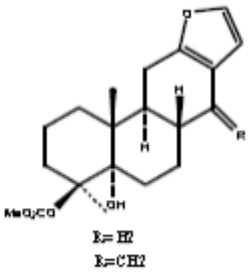
Caesalpinia bonduc, commonly known as **Grey Nicker**, is a species of flowering plant in the senna family, Caesalpiniaceae, that has a pantropical distribution. It is a liana that reaches a length of 6 m (20 ft) and scrambles over other vegetation. Stems are covered in curved spines. Its 2 cm (0.79 in) grey seeds known as nickernuts, are buoyant and durable enough to be dispersed by ocean currents.

Phytochemicals :

Whole plant of Caesalpinia bonducella contain all major chemical constituents such as Steroidal Saponin, Fatty Acids, Hydrocarbons, Phytosterols, Isoflavones, Aminoacids, and Phenolics.



Bonducellin


Caesalpinin

Traditional and Modern Uses :

The seed is claimed to be styptic, purgative and anthelmintic and cures inflammations, useful in colic, malaria, hydrocele, skin diseases and leprosy. The ointment is made from the powdered seeds with castor oil and applied externally in hydrocele and orchitis . The seeds are considered tonic, ferifuge, anthelmintic, antiblennorrhagic, and specific in the treatment of hydrocele. The oil from the seeds is used in convulsions and paralysis. In Guinea, the pounded seeds are considered vesicant. The powdered seeds were mixed with equal part of pepper powder to malaria patients and were found to posses feeble antiperiodic properties. In malignant malaria, they did not do any good. The seeds are ground in water and given internally in snake-bite. The seeds are not an antidote to snake-venom. Seed and long pepper powders taken with honey gives good expectorant effect. Burnt seeds with alum and burnt

arecanut are a good dentifrice useful in spongy gums, gum boils, etc. In West Indies, the roasted seeds are used as anti diabetic.

The kernel of the seed is very useful and valuable in all ordinary cases of simple, continued and intermittent fevers. The kernel powder mixed with equal parts of black pepper is taken thrice a day in a dose of 15-30 grains by adults and 3-4 grains by children. the roots are considered febrifuge and anthelmintic, they are much used as an astringent in leucorrhoea and blennorrhagia. In Guinea, a decoction of the root is prescribed in fever. The root-bark is good for tumours and for removing the placenta after child birth. Bark of root possesses number of properties like febrifuge, intestinalworms, amenorrhoea, cough, and anthelmintic etc. In Jamaica, it is used as rubifacient and as a local application for sores. Flowers are used in treating ascites and fruits in treating urinary disorder, leucorrhoea, piles and wounds.

Leaves and twigs are traditionally used for the treatment of tumors, inflammation and liver disorder. They have also been applied for treatment of toothache. Leaves and juices have been used traditionally for elephantiasis and smallpox.

Pharmacological Activities:

Antiinflammatoryactivity, Antimalarial activity

Antibacterial, Antifungal,

Antimicrobial activity

Antidiarrhoeal activity

Antioxidant activity, Antiproliferative activity

Article on Antibacterial, antidiarrhoeal, activities of *Caesalpiniabonducella*

Caesalpiniabonducella is an important medicinal plant for its traditional uses against different types of diseases. Therefore, the present study investigated the antimicrobial, antidiarrhoeal, and cytotoxic activities of the methanol extract and ethyl acetate, chloroform, and petroleum ether (pet. ether) fractions of ***C. bonducella*** leaves

3. அவுரி இலை(Indigofera tinctoria)

செய்கை:

நுட்புழுக்கொல்லி

முறைவெப்பகற்றி

வெப்பமுண்டாக்கி

பொதுகுணம்:

உரியலவு ரித்தழைத்தான் ஒது பதினெண்
அரியநஞ்சைத் தின்றவர்க்கும் ஆகும்- தெரிவரிய
வாதவெப்பு காமாலை மைந்தர் குறுமாந்தஞ்
சீதம் அகற்றுந் தெரி.

-அகத்தியர் குணவாகடம்

சன்னி பதிமூன்றுஞ் சந்தொடித்த வாதமுதல்
உன்னு விடக்கடியும் ஒடுங்காண்-மின்னுங்
கவுரிநிறம் உண்டாகுங் காசினியுள் நல்ல
அவுரியிலை தன்னால் அறி.

-அகத்தியர் குணவாகடம்

பொருள்:

இது பதினெண்வகை நஞ்சுகளைப் போக்கும். வளிசுரம், காமாலை, மாந்தம் , சீதளம் , முப்பிணி, கீல்வாதம் இவைகளைப் போக்கும். உடல் பொன் நிறம் பெறும்

Scientific classification

Binomial name	:	*Indigofera tinctoria*
Kingdom	:	Plantae
Family	:	Fabaceae
Genus	:	Indigofera
Species	:	*I. tinctoria*

Indigofera tinctoria, also called **true indigo**, is a species of plant from the bean family that was one of the original sources of indigo dye. It has been naturalized to tropical and temperate Asia, as well as parts of Africa, but its native habitat is unknown since it has been in cultivation worldwide for many centuries. Today most dye is synthetic, but natural dye from *I. tinctoria* is still available, marketed as natural coloring where it is known as tarum in Indonesia and nila in Malaysia. In Iran and areas of the former Soviet Union it is known as basma. The plant is also widely grown as a soil-improving groundcover. True indigo is a shrub one to two meters high. It may be an annual, biennial, or perennial, depending on the climate in which it is grown. It has light green pinnate leaves and sheafs of pink or violet flowers.

Chemical constituents:

A galactomannan from seed; Apigenin, Indigotin, Kaempferol, Tutetion, rotenoids degueli dehydrodeguelin, rotenol, rotenone, tephrosin and sumatrol from various parts of plant- auri

Medicinal uses:

The plant also contains rotenoids which are effective insecticides against mosquito larvae. Because of its use in traditional medicine there have been studies to attempt to support these uses. Indigotin, the substance responsible for the blue of the dye is thought to have antiseptic and astringent properties, and there are studies currently underway on indirubin, also found in woad, to discover if it has anti-cancer properties. Early studies have shown that the alcohol extracts of indigo's stems and leaves protect the liver from damage by chemicals such as carbon tetrachloride, found in cleaningplant's extracts from the leaves have potent antioxidant actions and antibacterial and anti-cancer ones. However the studies were carried out on animals and in vitro, no tests have been done on human subjects in any of the research quoted here.

In the same study the leaves were analyzed and found to contain flavonoids, saponins, tannins, steroidal terpenes, phenols and anthroquinone, and were found to be effective against lung cancer cells *in vitro*. The report concludes with this sentence "This study suggests that ethanol extract (sic) of *Indigoferatinctoria* have profound antibacterial, antioxidant and cytotoxic effect. In another study, "Anti-hyperglycaemic activity of ethanol extract and chloroform extract of *Indigoferatinctoria* leaves in streptozotocin induced diabetic mice (Family Papilionaceae)" *Indigoferatinctoria* leaves alcoholic extract long-term treatment may be beneficial in the management of type-1, type-2 diabetes."

In traditional Chinese medicine indigo has been used as a pain reliever, for fever, inflammation and to purify the liver and blood. In Indian traditional medicine it has been used to promote hair growth and is used as a hair dye for black hair, just as henna is used for red hair. It has been used for centuries in Ayurveda to treat depression, for cancer, bronchitis and other respiratory problems such as asthma, hemorrhaging, as well as problems with the spleen, lungs and kidneys. Some research suggests that it has liver protective properties. In other traditional medicine systems in the Indian subcontinent it has also been used for cardio-vascular problems, urinary tract problems and the paste made with the leaves is applied to sores, ulcers and piles and a decoction of the leaves was applied to the stings and bites of venomous creatures as well as to relieve pain and aid fast healing of burns and scalds.

Article of Immunomodulatory activity of *indigofera tinctoria* leaf :

In this study the effects of ethanolic and aqueous extracts of *Indigoferatinctoria* were investigated on the functions of peritoneal macrophages and peripheral blood lymphocytes isolated from Wistar rats through *in vitro* studies. Macrophage functions were determined through Nitric oxide (NO) estimation, Arginase production, lysosomal, phagocytic activities and analysis of proinflammatory cytokines (TNF-αand IL-1β) production. The lymphocytes proliferation was analyzed by MTT assay.

The results indicated that both ethanolic and aqueous extracts of *I. tinctoria* were enhanced nitric oxide (NO) production at 50µg/ml whereas it suppressed the production of arginase at 100 µg/ml by the macrophage. Moreover lysosomal and phagocytic activity of the macrophage was enhanced by the ethanolic and aqueous extracts at a dose of 100µg/ml. The extracts also enhanced the production of pro-inflammatory cytokines by the macrophages. With the lymphocytes. Collectively the results demonstrated that both extracts of *I. tinctoria* enhanced innate as well as adaptive immune response and proved the immunostimulating potential of the plant *I. tinctoria*.

4. சாணாக்கிக் கீரை (Ipomoea Marginata)

செய்கை:

கோழையகற்றி நுட்புழுக்கொல்லி சிறுநீர்ப்பெருக்கி

பொதுகுணம்:

கோழையோடு மாந்தங் குழந்தைச் கழிக்கணமும்
பேழையெனச் சொல்லும் பெருவயிறும்- கீழொருவர்
காணாக் கிருமிகளைக் கக்கு மழிபுண்ணுஞ்
சாணாக்கிக் கீரையிற்போஞ் சாற்று.

-அகத்தியர் குணவாகடம்

பொருள்:

இதனால் கபம் , பசித்தீ மந்தம், சுழிக்கணம் , பெருவயிறு, புழு நெளிகின்ற புண் ஆகிய இவை போம்.

Scientific classification

Binomial name	:	Ipomoea Marginata
Kingdom	:	Plantae
Family	:	Convolvulaceae
Genus	:	*Ipomoea*
Species	:	I. Marginata

Ipomoea marginata is a species of Phanerogama belonging to the family Convolvulaceae. It is one of the Ten Sacred Flowers of Kerala. It has alternating leaves, triangular-cordiformes, 5-8 by 3-5 cm, base cordate, apex acuminate, faintly pubescent, petiole 1-2 cm long.The inflorescences on sub-humid peaks. The calyx lobes are equal, obovate, globrous. 3cm pink-white corolla. The fruit is a globose capsule; with pubescent seeds.

Chemical constituents:

All leaves contain phenolics, flavonoid, hydroxyanthraquinones and Saponins . Humans use *Ipomoea* for their content of medical and psychoactive compounds, mainly alkaloids. Some species are renowned for their properties in folk medicine and herbalism; for example Vera.

Article on antibacterial activity of Ipomoea marginata:

Ipomoea marginata is one of the valuable medicinaplants having many therapeutic uses.the human pathogens selected for the study was staphylococcus,shigella sonnei,Entrrobacteria faecalis. Preliminary phytochemicals in the different extracts of Ipomoea marginata for the detection of alkaloids,carbohydrates,flavonoids,phenolic compounds,tannins,protein which can act as a potent anti bacterial agent.

5. பொடுதலை இலை(Phyla nodiflora)

செய்கை:

உள்ளழலாற்றி வீக்கங் கரைச்சி

சிறுநீர்ப்பெருக்கி துவர்ப்பி

கோழையகற்றி உரமாக்கி

பொதுகுணம்:

பொடுதலையின் பேருரைத்தால் போராமப் போக்கும்

அடுதலைசெய் காசம் அடங்கும்- கடுகிவரு

பேதியொடு சூலைநேய் பெசரிய வெண்மேகம்

வாதமும்போ மெய்யுரக்கும் வாழ்த்து.

-அகத்தியர் குணவாகடம்

பொருள்:

இதனால் சீதக்கழிச்சல், பெருங்கழிச்சல், இருமல், சூலைநோய், வெள்ளை, வளி நோய் இவை போம். உடல் வன்மைப்படும்.

Scientific classification

Binomial name	:	Phyla nodiflora
Kingdom	:	Plantae
Family	:	Verbenaceae
Genus	:	*Phyla*
Species	:	P. nodiflora

Phyla nodiflora (**frog fruit**, **sawtooth fogfruit**, **turkey tangle**), is an ornamental plant in the Verbenaceae family, and is native to South America and the United States. It can be found in tropical areas around the globe, a naturalized species in many places. This plant is cited in *Flora Brasiliensis* by Carl Friedrich Philipp von Martius. It is often grown ornamentally as a ground cover plant, and is often present in yards or disturbed areas as a lawn weed. The inflorescence consists of a purple centre encircled by small white-to-pink flowers. The flower takes on a match-like look, which is why the plant is sometimes called matchweed. It is similar to the related species Phyla lanceolata, but differs in having much shorter leaves that are often blunt and much more rounded. Both species are common as weeds and in the ornamental environment

Chemical constituents:

The plant contains a variety of constituents such as triterpenoids, flavonoids, phenols, steroids and many others. Amoung these flavonoids were the most commonly found. Nodifloretin B-sitisterol glycoside and stigmasterol glycoside from the leaves of L.nodiflora Nodifloridin along with lactose, maltose, fructose, and xylose were isolated from the plant. Two new flavone ghycosides lippiflorin along with the known compound nepetin and batalifilin from the ethanol extract of L.nodiflora were isolated. From

the flowers of L.nodoflora, two flavones glycosides, hydroxyluteolin Oapioside and luteolin, glucoside, and three flavones, hydroxyluteolin, nepetin, and batatifolin were isolated . From the alcoholic extracts of L.nodiflora, two phenypropanoid compounds acteoside and O-acetylechinacoside and a flavone demethoxycentaureidin were isolated. From L.nodiflora, tweleve flavones sulfates Hispidulin sulfate, Hispidulin, disculfate, Jaceosidin, disulfate, Nepetin, disulfate, Nodifloretin, disulfate, Hydroxyluteolin, Nodifloretin, sulfate Hydroxyluteolin sulfate, Hydroxyluteolin, sulfate, Jaceosidin, sulfate, Nepetin, sulfate, and Hispidulin sulfate along with the known compounds Nepetin, Hispidulin, and Jaceosidin. Halleridone and Hallerone as their acetyl dervatives from the leaves of L.nodiflora were isolated. From the methanolic extract of the aerial parts of L.nodiflora, a new triterpenoid lippiacin, a new steroid 4', 5' dimethoxybenzoloxy stigmasterol along with the known stigmasterol and B-sitosterol were isolated.

The plant was fractionated several constituents from the phyla nodoflora using multi component solvent systems; Hexane : Toluene:Ethyl acetate for methanol extract and Hexane : Ethyl acetate for chloroform and petroleum ethere extract. Five different phenolic components were isolated and were compared using HPTLC, among these extracts, the highest number of constituents were isolated from the butanol extract. The molecular basis of a compound, cyclo pentane phenanthrenol, which exhibit anti inflammatory property was also given. Nodofloretin, a new flavone was also discovered . Chemical and biological investigations of medicinal herbs phyla nodiflora was done. Steroidal constituent from the aerial parts of Lippia nodiflora Linn was also obtained.

Medicinal uses:

1. It has wonderful anti bacterial properties making it very effective for treating all kinds of wounds when applied as a poultice.

2. It has anti inflammatory properties making it very effective as a home remedy for treating knee and joint pain. It also reduces piles inflammation when taken internally.
3. It has anti diabetic properties making it a very effective natural remedy for reducing blood sugar levels for diabetic patients.
4. It also has diuretic properties and people who are suffering from water retention will benefit drinking a water decoction of the plant.
5. It also has anti urolithiatoc properties (prevention of formation of kidney stones). It not only prevents, it also effectively treats existing stones.
6. Phyla nodiflora has anti proliferative properties and especially the stem and the leaf extract inhibits breast cancer cell growth.
7. It also has anti fungal properties making it very effective for treating fungal infections when applied topically as a poultice.

Artical on Antibacterial activity, Antimicrobial activity& Anti-inflammatory activity of Phyla nodiflora:

This study describes the extraction, fractionation and antibacterial activity of Phyla nodiflora. The plant crude extract and all sub fractions (n-hexane, chloroform, ethyl acetate, n-butanol and aqueous) were subjected to antibacterial activities. For antibacterial activities seven bacterial strains Escherichia coli, Pseudomonas aeruginosa, Klebsiellapneumoniae, Salmonella typhi, Staphylococcus epidermidis, Staphylococcusaureus (MRSA) and Bacillus subtillus were used in antibacterial assay. Ethyl acetate and chloroform fractions showed excellent activity against Bacillus subtilis, Staphylococcus epidermidis and Staphylococcus aureus. Phyla nodiflora is used in colic, asthma, diarrhea, bronchitis, ulcers, gonorrhea fever, knee joint pain, anti-inflammatory and antiplasmodic. The phytochemical study of plant shows that it contain flavonoids, sugar, essential oil, sterols, resins, tannins and non glucosides bitter substances .

In the present study we have chosen the plant Phyla nodiflora used in herbal medicine to determine its antibacterial property.This plant against some gram positive and gram negative pathogenic microorganism

Antimicrobial activity:

The Methanolic extract of Phyla nodiflora had been evaluated for antibacterial. The anti microbial screening was performed by agar diffusion method using a paper disc. The ethanol extract showed significant antibacterial activity due to the presence of bio-active compounds when compared with petroleum ether and aqueous extract.

Anti-inflammatory activity:

The crude methonal extract and the isolated compound of cyclo-pentanophenanthrenol from L.nodaflora were assessed for anti-inflammatory activity. Thus the compound was concluded to exhibit anti inflammatory activity

6. நல்லெண்ணெய் (Sesamum indicum)

செய்கை:

உள்ளழலாற்றி

மலமிளக்கி

உடலுரமாக்கி

வறட்சியகற்றி

பொதுகுணம்:

புத்திநயனக்குளிர்ச்சி பூரிப்பு மெய்ப்புளகஞ்
சுத்துவங் கத்தி தனியிளமை- மெத்தவுண்டாங்
கண்ணோய் செவிநோய் கபாலவழல் காசநொய்
புண்ணோய்போ மெண்ணெய்யாற் போற்று.

-அகத்தியர் குணவாகடம்

பொருள்:

இது புத்திக்குத் தெளிவு, விழிகளுக்குக் குளிர்ச்சி, உடல் பூரிப்பு, உடல் வன்மை ஆகியவற்றைத் தருவதோடு கண்ணோய் , செவிநோய், தலை கொதிப்பு, சொறி சிரங்கு, புண் முதலியவைளையும் போக்கும். இருமலைத் தணிக்கும். மனமகிழ்ச்சியைத் தரும்

Kingdm: Plantae (Angiosperms)

Order: Lamiales

Family: Pedaliaceae

Genus: *Sesamum*

Species: S. indicum

Sesamum Indicum (Sesame) Seed Oil is a pale yellow oil made from sesame seeds. Sesame is an annual plant growing 50 to 100 cm (1.6 to 3.3 ft) tall, with opposite leaves 4 to 14 cm (1.6 to 5.5 in) long with an entire margin; they are broad lanceolate, to 5 cm (2 in) broad, at the base of the plant, narrowing to just 1 cm (0.4 in) broad on the flowering stem. The flowers are yellow, tubular, 3 to 5 cm (1.2 to 2.0 in) long, with a four-lobed mouth. The flowers may vary in colour, with some beiSesame seeds are small. Their size, form, and colours vary with the thousands of varieties now known. Typically, the seeds are about 3 to 4 mm long by 2 mm wide and 1 mm thick. The seeds are ovate, slightly flattened, and somewhat thinner at the eye of the seed (hilum) than at the opposite end.

Chemical composition:

Sesame seeds contain the lignanssesamolin, sesamin, pinoresinol and lariciresinol.

Medicinal uses:

- Prevents respiratory disorders
- A good source of protein
- Prevents diabetes:
- Natural cure for anemia:

- Innate anti-cancerous properties
- Prevents cardiovascular & rheumatoid arthritis symptoms
- Good digestive health

The weight of the seeds is between 20 Nutritional information:

In a 100-gram amount, dried whole sesame seeds provide 573 calories and are composed of 5% water, 23% carbohydrates (including 12% dietary fiber), 50% fat, and 18% protein In a 100-gram amount, dried whole sesame seeds provide 573 calories and are composed of 5% water, 23% carbohydrates (including 12% dietary fiber), 50% fat, and 18% protein . Whole sesame seeds are rich (20% or more of the Daily Value, DV) in several B vitamins and dietary minerals, especially iron, magnesium, calcium, phosphorus, and zinc. The by-product that remains after oil extraction from sesame seeds, also called sesame oil meal, is rich in protein (35-50%) and is used as feed for poultry and livestock.

Sesame Seeds Benefits for 1. Natural anti-inflammatory agents:

Sesame seed oil has anti-inflammatory properties which makes it an innate healing agent. The antibacterial properties help in fighting various bacteria, including staphylococcus, streptococcus, and athlete's foot fungus, affecting the skin. A mixture of sesame seed oil and lukewarm water is an effective home remedy for vaginal yeast infections.

Antibacterial activity:

Antibacterial activity of silver nanoparticles produced by Sesamum indicum seed extract on staphylococcus epidermidis and salmonella typhi.

MATERIALS AND METHODS

5. MATERIALS AND METHODS

5.1. Preparation of the Trial drug SIRUPULLADI ENNAI

Ingredients:

Sirupulladi [Desmodium gangeticum] சிறுபுள்ளடி இலை -1பிடி

Kalarchi kolundhu[Caesalpinia bonduc] கழற்சி கொழுந்து -1பிடி

Avuri leaf [Indigofera tinctoria] அவுரி இலை -1பிடி

Saanaki leaf [Ipomoea marginata] சாணாக்கியிலை -1பிடி

Poduthalai leaf [Phylla nodiflora] பொடுதலை இலை -1பிடி

Nallennai [Gingelly oil] நல்லெண்ணெய் -650ml

Method of purification:

Sirupulladi leaf: Remove the veins and wash in pure water .

Kalarchi kolundhu: Remove the veins and wash in pure water.

Avuri leaf: Remove the veins and wash in pure water.

Saanaki leaf: Remove the veins and wash in pure water.

Poduthalai leaf : Remove the veins and wash in pure water.

Nallennai: Keep the oil with clean water one hour thirty minutes.

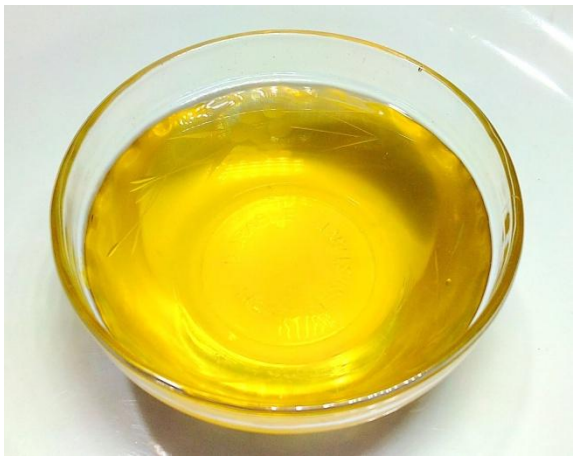
சிறுபுள்ளடி இலை

கழற்சி கொழுந்து

அவுரி இலை

சாணாக்கியிலை

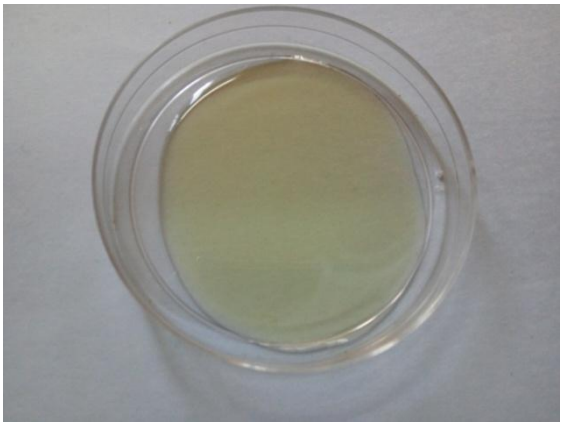
பொடுதலை இலை



நல்லெண்ணெய்

Method of Preparation:

Take handful of each first 5 ingredients mentioned above and purify them accordingly. Disintegrate each ingredient & mix them with 650ml of gingelly oil taken in a mud pot. Cover the mouth of the mud pot with thin clean white cloth & expose the pot to the direct sun light. Preserve the medicine in a clean air tight container.



Prepared Trial Drug –Sirupulladi Ennai

5.2 Preclinical Studies:

5.2.1 In-vitro Anti-Inflammatory Activity by Protein (Albumin) denaturation Assay:

Albumin Denaturation Assay Procedure:

In-vitro anti-inflammatory activity Sirupuladi Oil (SPO) was studied using albumin denaturation technique. The reaction mixture consisted of bovine serum albumin (5% aqueous solution) and test sample SPO at varying concentration ranges from 100 to 500 mcg/ml and standard diclofenac sodium at the concentration of100 mcg/ml of final volume. pH was adjusted by using a small amount of 1N Hydrochloric acid. The samples were incubated at 37°C for 20 min and then heated at 57°C for 3 min. After cooling the sample, 2.5 ml of phosphate buffer solution was added into each test tube. Turbidity developed was measured spectrophoto-metrically at 660 nm, for control distilled water was used instead of test sample while product control tests lacked bovine serum albumin. The experiment was performed in triplicate.

The Percentage protection from denaturation is calculated by using the formulae

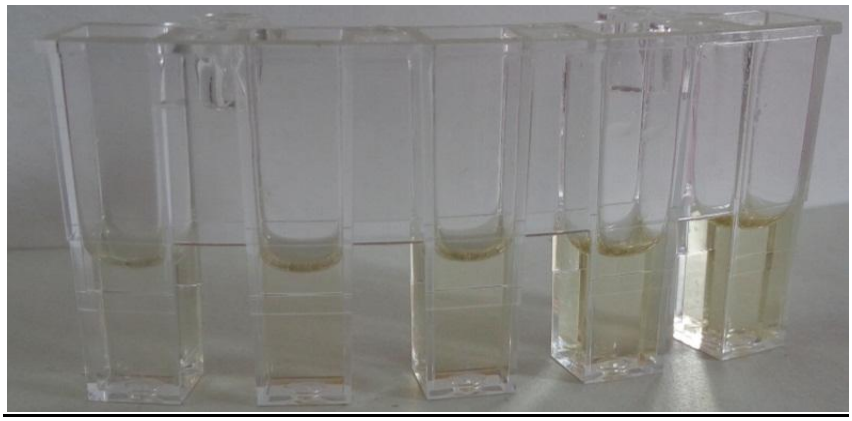
$$\left[\frac{(A)_{\text{control}} - (A)_{\text{sample}}}{(A)_{\text{control}}}\right] \times 100.$$

Statistical analysis

Results are expressed as Mean ± SD. The difference between experimental groups was compared by One-Way Analysis Of Variance (ANOVA) followed by Dunnet Multiple comparison test

Preparation of Test and control

Absorbance of reaction mixture – Test Sample



Absorbance of reaction mixture – Control and Standard

5.2.2. Physicochemical Analysis

Percentage Loss on Drying

10gm of test drug (weight equivalent to oil) was accurately weighed in evaporating dish .The sample was dried at 105^{o}C for 5 hours and then weighed.

Percentage loss in drying = Loss of weight of sample/ Wt of the sample X 100

Determination of Total Ash

3 g of test drug (weight equivalent to oil) was accurately weighed in silica dish and incinerated at the furnace a temperature 400 ºC until it turns white in color which indicates absence of carbon. Percentage of total ash will be calculated with reference to the weight of air-dried drug.

Total Ash = Weight of Ash/Wt of the Crude drug taken X 100

Determination of pH

Sample being oily in nature the direct litmus evaluation method was adopted to check the pH of the sample.

Determination of Iodine value

About 20 gm of oil was transferred into Iodine flask. To which 10 ml of chloroform was added and warmed slightly and cooled for 10 minutes. Followed by this about 25 ml of Wiji's solution was added in the same flask and shaken well. The flask was allowed to stand for 30 mins and refrigerated for an hour. About 10 ml of KI solution was added to this and titrated against 0.1 N Sodium thiosulphate solutions until the appearance of yellow colour. 1 ml of starch indicator was added and again titrated against the sodium thiosulphate solution from the burette. Disappearance of blue colour indicates end point. Repeat the above procedure without taking sample and note the corresponding reading for blank titration.

Determination of saponification value

About 2 gm(weight equivalent to oil) of test sample was transferred into the round bottomed flask. To this about 20 ml of 0.5 N alcoholic KOH solutions was added to the round bottomed flask. Repeatthe same procedure with out taking the sample for blank titration . Reflux both sample and blank round bottomed flasks for 1 hour. After reflux, allow both the round bottomed flasks to cool. Titrate the samples using 0.5 N HCl with phenolphthalein indicator. The disappearance of pink indicates the end point.

5.2.3 Phyto Chemical Analysis

Sample Preparation

Sirupuladi Oil (SPO) was extracted with hexane and the extract was subjected to the following analysis

Test for Alkaloid- Mayer's reagent

To the test drug about 2ml of Mayer's reagent was added and was observed for the presence of alkaloids. Appearance of dull white precipitate indicates the presence of alkaloids.

Test for flavonoid

To 0.1ml of the test sample about 5 ml of dilute ammonia solution were been added followed by addition of few drops of conc. Sulfuric acid. Appearance of yellow color indicates the presence of Flavonoids.

Test for Glycosides -Borntrager's Test

Test drug is hydrolysed with concentrated hydrochloric acid for 2 hours on a water bath, filtered and the hydrolysate is subjected to the following tests. To 2 ml of filtered hydrolysate, 3 ml of choloroform is added and shaken, choloroform layer is separated and 10% ammomia solution is added to it. Pink colour indicates presence of glycosides.

Test for Triterepnoids

To the test solution 2ml chloroform was added with few drops of conc. Sulphuric acid (3ml) at the side of the test tube. An interface with a reddish brown coloration is formed if

terpenoids constituent is present.

Test for Steroids - Salkowski test

To the test solution 2ml of chloroform was added with few drops of conc. Sulphuric acid (3ml), and shaken well. The upper layer in the test tube was turns into red and sulphuric acid layer showed yellow with green fluorescence. It showed the presence of steroids.

Test for Carbohydrates - Benedict's test

To 0.5 ml of test drug about 0.5 ml of Benedic's reagent is added. The mixture is heated on a boiling water bath for 2 minutes. A characteristic coloured precipitate indicates the presence of sugar.

Test – Phenol- Lead acetate test

The test sample is dissolved in of distilled water and to this 3 ml of 10% lead acetate solution is added. A bulky white precipitate indicates the presence of phenolic compounds.

Test for tannins

About 0.5ml of test sample is boiled in 20 mL of distilled water in a test tube and then filtered. The filtration method used here is the normal method, which includes a conical flask and filter paper. The 0.1% FeCl3 is added to the filtered samples and observed for brownish green or a blue black coloration, which shows the presence of tannins

Test for Saponins

The test drugs were shaken with water vigorously for 10 mins , copious lather formation indicates the presence of saponins.

Test for Proteins (Biuret Test)

Biuret test: Equal volume of 5% solution of sodium hydroxide and 1% copper sulphate were added. Appearance of pink or purple colour indicates the presence of proteins and free amino acids.

Test of Coumarins

1 ml of extract, 1 ml of 10% sodium hydroxide was added. The presence of coumarins is indicated by the formation of yellow color.

Test for Anthocyanin

About 0.2 ml of the extract was weighed in separate test tube, 1ml of 2N Sodium hydroxide was added, and heated for 5 minutes at 100 ± 2°C. Observed for the formation of bluish green color which indicates the presence of anthocyanin.

5.3 Biochemical analysis:

Biochemical Analysis of *Sirupilladi Ennai* was done at the Biochemistry lab at National Institute of Siddha, Chennai by the method of Kolkate.

Preparation of Extract: 5ml of sample was taken in a 250ml clean beaker and added with 50ml of distilled water. Then it is boiled well for about 10 minutes. Then it is cooled and filtered in a 100ml volumetric flask and made up to 100ml with distilled water. This preparation is used for the qualitative analysis of acidic/basic radicals and biochemical constituents in it.

Test for Silicate

A 2ml of the sample was shaken well with distilled water.

Action of Heat

A 2ml of the sample was taken in a dry test tube and heated gently at first and then strong.

Action of Heat

A 2ml of the sample was taken in a dry test tube and heated gently at first and then strong.

Ash Test

A filter paper was soaked into a mixture of extract and dil. cobalt nitrate solution and introduced into the Bunsen flame and ignited

I. Test for Acid Radicals

Test for Sulphate:

2ml of the above prepared extract was taken in a test tube to this added 2ml of 4% dil ammonium oxalate solution

Test for chloride:

2ml of the above prepared extracts was added with 2ml of dil.HCl is added until the effervescence ceases off.

Test for Phosphate:

2ml of the extract were treated with 2ml of dil.ammonium molybdate solution and 2ml of con.HNo3.

Test for carbonate:

2ml of the extract was treated with 2ml of dil. magnesium sulphate solution.

Test for Nitrate:

1gm of the extract was heated with copper turning and concentrated H_2So_4 and viewed the test tube vertically down.

II.Test for Basic radicals

Test for lead:

2ml of the extract was added with 2ml of dil.potassium iodine solution.

Test for copper:

One pinch (25mg) of extract was made into paste with con. HClin a watch glass and introduced into the non-luminuous part of the flame.

Test for Aluminium:

To the 2ml of extract dil.sodium hydroxide was added in 5 drops to excess.

Test for Iron:

a. To the 2ml of extract add 2ml of dil.ammonium solution

b. To the 2ml of extract 2ml of thiocyanate solution and 2ml of con HNo3 is adde.

Test for Zinc:

To 2ml of the extract dil.sodium hydroxide solution was added in 5 drops to excess and dil.ammonium chloride is added.

Test for Calcium:

To 2ml of the extract was added with 2ml of 4% dil.ammonium oxalate solution

Test for Magnesium:

To 2ml of extract dil.sodium hydroxide solution was added in drops to excess.

Test for Ammonium:

To 2ml of extract 1 ml of Nessler's reagent and excess of dil.sodium hydroxide solution are added.

Test for Potassium:

A pinch (25mg) of extract was treated of with 2ml of dil.sodium nitrite solution and then treated with 2ml of dil.cobalt nitrate in 30% dil.glacial acetic acid.

Test for Sodium:

2 pinches (50mg) of the extract is made into paste by using HCl and introduced into the blue flame of Bunsen burner.

Test for Mercury:

2ml of the extract was treated with 2ml of dil.sodium hydroxide solution.

Test for Arsenic:

2ml of the extract was treated with 2ml of dil.sodium hydroxide solution

III. Miscellaneous

Test for Starch:

2ml of extract was treated with weak dil.Iodine solution**.**

Test For Reducing Sugar:

5ml of Benedict's qualitative solution was taken in a test tube and allowed to boil for 2 minutes and added 8 to 10 drops of the extract and again boil it for 2 minutes. The colour changes are noted.

Test for the Alkaloids:

a) 2ml of the extract was treated with 2ml of dil.potassium Iodide solution.

b) 2ml of the extract was treated with 2ml of dil.picric acid.

c) 2ml of the extract was treated with 2ml of dil.phosphotungstic acid.

Test for Tannic Acid:

2ml of extract was treated with 2ml of dil.ferric chloride solution**.**

Test for Unsaturated Compound:

To the 2ml of extract 2ml of dil.Potassium permanganate solution is added**.**

Test for Type of Compound:

2ml of the extract was treated with 2 ml of dil.ferric chloride solution.

5.4 Clinical Studies

40 Children with confirmed diagnosis of NEER KANAMANTHAM with satisfying the inclusion criteria were enrolled after obtaining written informed consent and were to receive SIRUPULLADI ENNAI with dosage of 1.6 ml BID for 3dayss

Study design and conduct of study:

Study type:	An open clinical study
Study place:	OPD and IPD of Ayothidas Pandithar Hospital,
	National Institute of Siddha, Tambaram Sanatorium,
Sample size:	40 Children
Study period:	24 months.

	Clinical study
Inclusion criteria	• 3 to 7 years. • both male & female children • Cough • Running nose • Fever on&off • Headache • Willing to give specimen of blood for investigation when required • Willing to be admitted in the hospital or willing to attend OPD when required • Willing to sign the informed, consent form
Exclusion criteria	• Children below 3 years and above 7 years of age • Continuous fever for 5 or more days • Signs of moderate &severe dehydration • H/o Childhood asthma • Patients with any other serious illness.
Withdrawal criteria	• Exacerbation of symptoms • Occurrence of any adverse effect • Patient turning unwilling during the course of trial drug
Dosage of drugs	3 to 7yrs-1.6ml/bd
Duration of treatment	3 days
Investigation	Routine blood: TC, DC, Hb Urine : Albumin, deposits. Siddha investigations : Neerkuri, Neikuri

Study Enrollment:

1. In this study, patients reporting at the NIS OPD with three or more clinical symptoms of cough, running nose, fever, headache, malaise, diarrhea were examined clinically for enrolling in this study based on the inclusion and exclusion criteria.
2. The patients who are to be enrolled would be informed about the study, trial drug, possible outcomes and the objectives of the study in the language and terms understandable to them and to their informants.
3. After ascertaining the patient and informants willingness, informed consent was obtained in writing from them in the consent form (Form II).
4. All these patients will be given unique registration card in which patients' Registration number of the study, Address, Phone number and Doctors phone number etc. were given, so as to report easily should any complications arise.
5. Complete clinical history, complaints and duration, examination findings were recorded in the prescribed Proforma in the history and clinical assessment forms separately.

Patients were advised to take the trial drug and appropriate dietary advice were given according to the patient informant's perfect understanding

Conduct of the Study:

The trial drug SIRUPULLADI ENNAI" was given continuously for 3 days. On the 4th day patient was requested to attend the OPD for clinical assessment and it was recorded in the clinical assessment form (Form IV) and prognosis noted. The patient's informant is requested to bring back the un-consumed trial drug if any. For IP patients the drug was provided daily and prognosis were noted. Laboratory investigations were done on the day before the start of my study and 4th day of the trial drug administration. After the completion of the treatment, the patients were advised to visit our OPD on 7thday for follow up.

Data Management:

- After enrolling the patient in the study, a separate file for each patient was opened and all forms were filed in the file. Whenever study patient visits OPD during the study period, the respective patient file will be taken and necessary recordings will be made at the assessment form or other suitable form.
- The screening forms were filed separately.
- The Data recordings were monitored for completion and adverse event by HOD and data logical recording and completeness were monitored by statistician (Sr.Research Officer (Statistics)). All forms were further scrutinized in presence of Investigators by Sr.Research Officer (Statistics) for logical errors and incompleteness of data before entering onto computer to avoid any bias. No modification in the results is permitted for unbiased report.
- Any missed data found in during the study, were collected from the patient, but the time related data will not be recorded retrospectively
- All collected data weree entered using MS access software onto computer.
- Investigators were trained to enter the patient data and cross checked by SRO

Data Collection Forms:-

- Screening Form
- Consent Form
- Information Sheet
- Case Report Form (CRF)
- Drug Compliance
- Withdrawl Form
- Adverse Reaction
- Pharmacovigilance Form

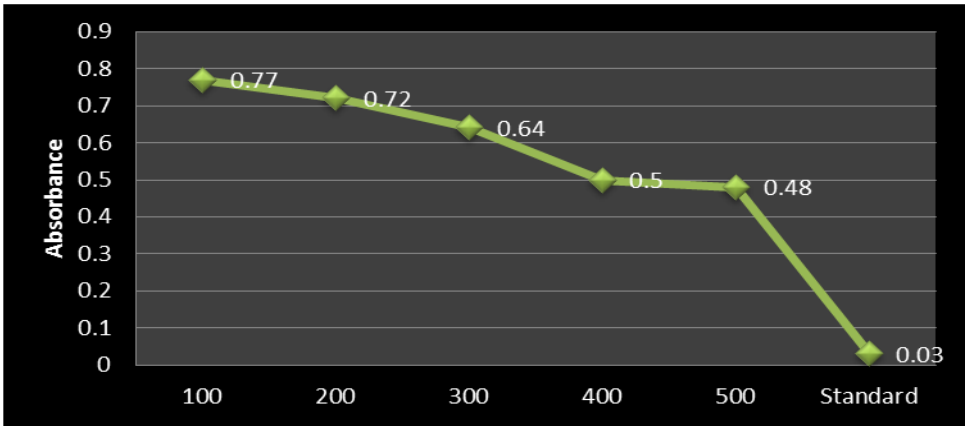
RESULTS AND OBSERVATIONS

6. RESULTS AND OBSERVATIONS

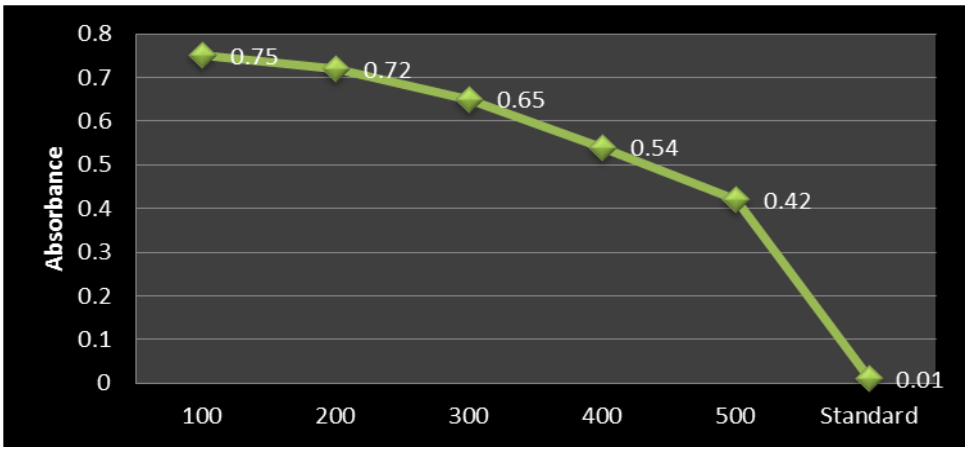
6.1 Preclinical studies

6.1.1 In-vitro Anti-Inflammatory Activity by Protein (Albumin) denaturation Assay

Absorbance Range of test and standard at Trial 1



Absorbance Range of test and standard at Trial 2



Absorbance Range of test and standard at Trial 3

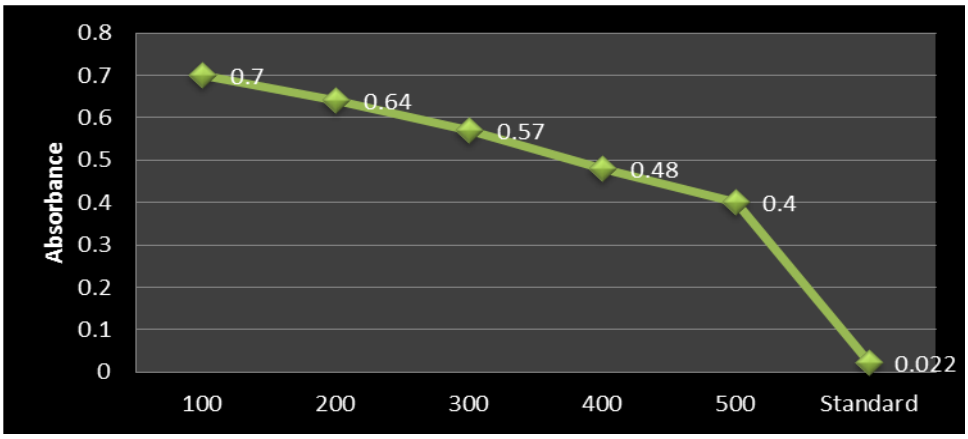


Table-6.1.1a

Concentration µg/ml	Absorbance
Control	0.85 ± 0.05
SPO 100	0.74 ± 0.03
SPO 200	0.69 ± 0.04
SPO 300	0.62 ± 0.04
SPO 400	0.50 ± 0.03
SPO 500	0.43 ± 0.041
Diclofenac sodium (100 µg)	0.02 ± 0.01

Each value represents the mean ± SD. N=3

Table-6.1.1b

Concentration µg/ml	Percentage Inhibition of Protein Denaturation
SPO 100	3.275 ± 2.84
SPO 200	8.609 ± 3.93
SPO 300	16.97 ± 4.27
SPO 400	29.84 ± 5.67
SPO 500	38.31 ± 0.39
Diclofenac sodium (100 µg)	85.32 ± 2.685

Each value represents the mean ± SD. N=3

The result obtained from the present clearly indicates that the test drug SPO was effective in inhibiting heat induced albumin denaturation. Maximum percentage inhibition of about 38.31 % was observed at 500 µg/ml when compare to that of the Diclofenac sodium, a standard anti-inflammatory agent with the maximum inhibition 85.32 % at the concentration of 100 µg/ml. From the result of the study it was concluded that the test drug SPO possess convincing anti-inflammatory property in protein denaturation assay.

6.1.2 Physicochemical Analysis:

Table-5.1.2a

Parameter	Observation
Color	Yellowish Brown
Smell	Stringentodour
Touch	Oily
Appearance	Clear

Table 6.1.2b

S.No	Parameter	Mean (n=3) SD
1	Loss on Drying at 105 °C (%)	2.83 ± 0.85
2	Total Ash (%)	0.45 ± 0.12

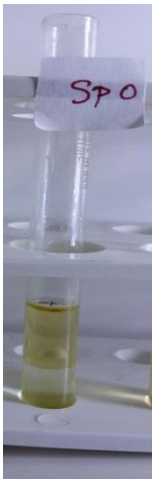
S.No	Specific Test	SPO
1	PH	6
2	Refractive index	1.49
3	Iodoine value (mg I2/g)	118
4	Saponification Value (mg of KOH to saponi 1gm of fat)	194

6.1.3 Phyto chemical Analysis:

Test for Alkaloid- Mayer's reagent

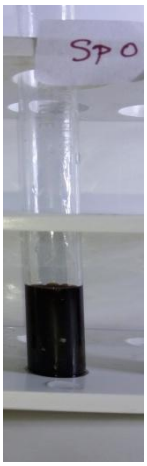
Test for flavonoid

Test for Glycosides -Borntrager's



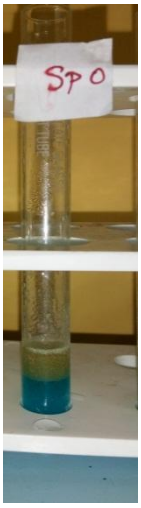
Test for Triterepnoids

Test for Steroids - Salkowski test



Test for tannins

Test for Carbohydrate

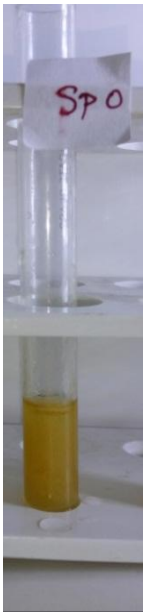


Phenol- Lead acetate test

Test for Saponins

Test for Proteins (Biuret Test)

Test of Coumarins



Test for anthocyanin

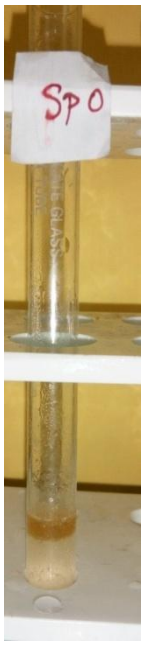


Table-6.1.3

PHYTOCOMPONENTS	SPO
Alkaloids	-
Flavonoids	+
Glycosides	-
Steroids	+
Sugar	-
Triterepnoids	-
Coumarins	+
Phenols	+
Tannins	-
Saponins	+
Proteins	+
Anthocyanin	-

+ Indicates positive; - Indicates Negative

61.4 BIOCHEMICAL ANALYSIS:

Table: 6.1.4a Acid radicals studies:

S.No	Parameter	Observation	Result
1	Test for Sulphate	Cloudy appearance present	Positive
2	Test for Chloride	Cloudy appearance present	Positive
3	Test For Phosphate	Cloudy yellow appearance absent	Negative
4	Test For Carbonate	-	Negative

5	Test For Nitrate	-	Negative
6	Test for Sulphide	-	Negative
7	Test For Fluoride &oxalate	-	Negative
8	Test For Nitrite	-	Negative
9	Test For Borax	-	Negative

Table: 6.1.4b . basic radicals studies

S.No.	Parameter	Observation	Result
1	Test for Lead	-	Negative
2	Test for Copper	-	Negative
3	Test For Aluminium.	-	Negative
4	Test For Iron.	-	Negative
5	Test For Zinc	-	Negative
6	Test for Calcium	Cloudy appearance and white precipitate absent	Negative
7	Test For Magnesium	White precipitate absent	Negative
8	Test For Ammonium	Mild brown colour disappears	Negative
9	Test For Potassium	-	Negative
10	Test For Sodium	-	Negative
11	Test For Mercury	-	Negative
12	Test For Arsenic	-	Negative

Table: 6.1.4c Miscellaneous

S.No	Parameter	Observation	Result
1	Test for Starch	-	Negative
2	Test for Reducing sugars	-	Negative
3	Test For Alkaloids.	Yellow colour absent	Negative
4	Test For Tannic acid	Blue-black precipitate absent	Negative
5	Test -unsaturated compounds	-	Negative
6	Test for Type of compounds	Green and Red colour absent	Negative

The Bio chemical analysis of trial medicine showed the presence of **Sulphate** and **Chloride.**

6.2.1Clinical Studies

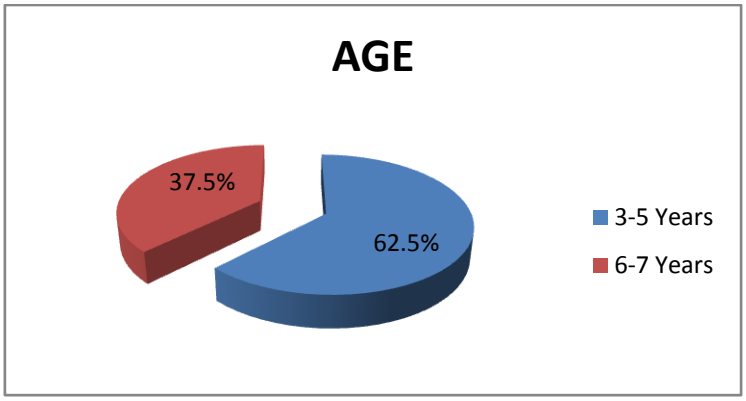
40 Patients with confirmed diagnosis of Neer Kanamantham with satisfying the inclusion criteria were enrolled after obtaining written informed consent and were to receive Sirupulladi Ennai with dosage of 1.6 ml BID for 3days.

Results were observed with respect to the following criteria

1. Age, Sex, Parent's Socio Economic Status
2. Diet
3. Nilam
4. Paruvakaalam
5. Uyir thathukkal
6. Ezhu udal kattugal
7. Envagaithervugal
8. Neikuri
9. Cllinical features
10. Haemotological Profile
11. Biochemical Analysis

Table-6.2.2 Distributions of Childrens with *NEER KANAMANTHAM* according to Age

S.No	Age	No.of .cases	Percentage
1.	3-5 Years	25	62.5
2.	6-7 Years	15	37.5

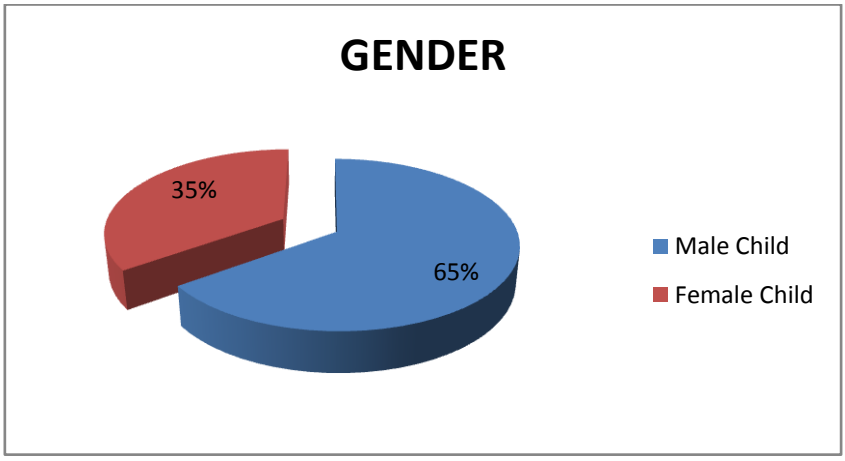


Inference:

Out of 40 patients, 62.5 % of cases were 3-5 years, 37.5 % were 6-7 years.

Table -6.2.3 Distributions of Children with *NEER KANAMANTHAM* according to Gender

S.No	Sex	No of Cases	Percentage
1.	Male Child	26	65
2.	Female Child	14	35

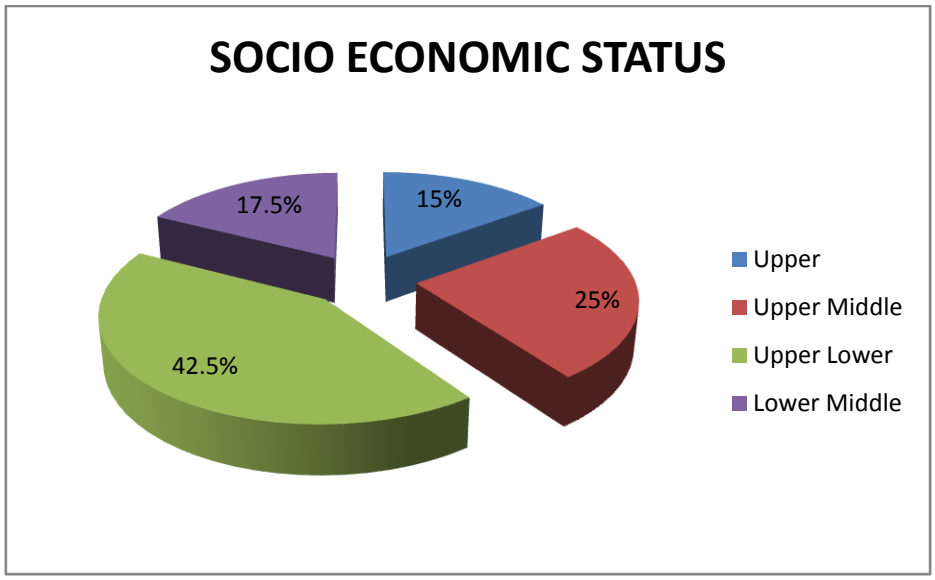


Inference:

Out of 40 patients 65% were male children and 35% were female children.

Table-6.2.4 Distribution of Children with *NEER KANAMANTHAM* according to socio-economic status

S.No	Socio-economic Status	No of Cases	Percentage
1.	Upper	6	15%
2.	Upper Middle	10	25%
3.	Upper lower	17	42.5%
4.	Lower Middle	7	17.5%

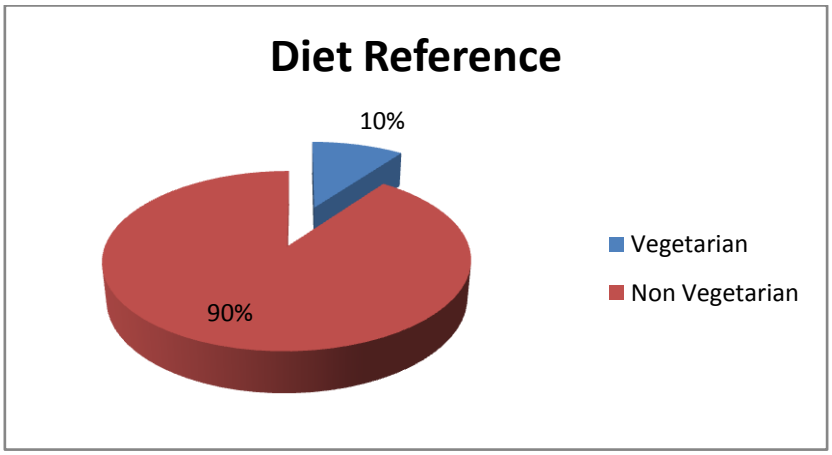


Inference:

About 15 % patients were under high income group, 25% patients were under upper middle class, 42.5 % patients were under upper lower class and 17.5 % patients were under lower middle class. The highest incidence occurred in Upper lower class.

Table-6.2.5 Distribution of Children with *NEER KANAMANTHAM* according to Diet reference

S.NO	Food habits	No of cases	Percentage
1.	Vegeterian	4	10
2.	Non-Vegeterian	36	90

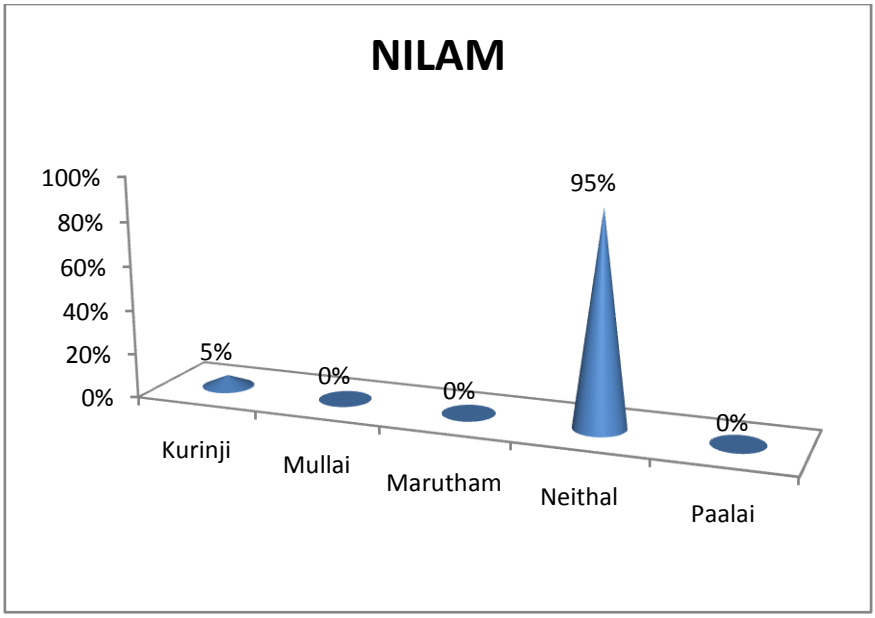


Inference:

Out of 40 patients 10% were noted as vegetarian and 90% were noted as non vegetarian

Table -6.2.6 Distribution of Children with *NEER KANAMANTHAM* according to Nilam

Nilam	No of cases	Percentage
Kurinji	2	5
Mullai	0	0
Marutham	0	0
Neithal	38	95
Paalai	0	0

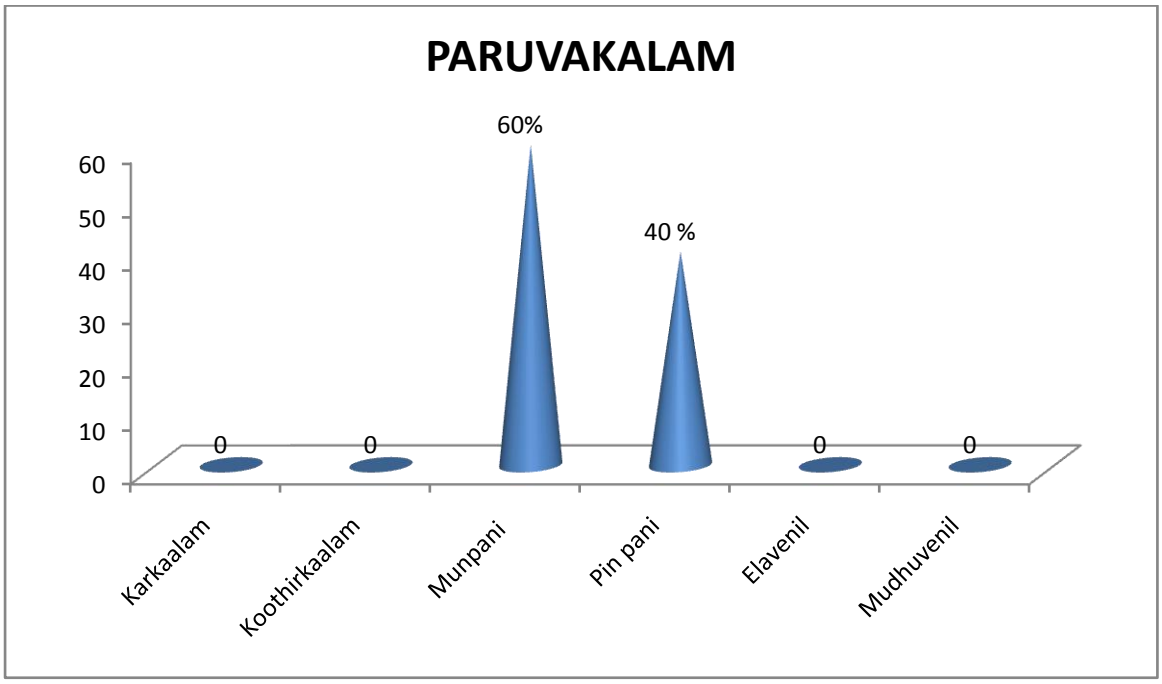


Inference:

Among 40 patients, 95 % were from Neithal land and remaining 5 % were from Kurinji land.

Table-6.2.7 Distribution of Children with *NEER KANAMANTHAM* according to Paruvakalam

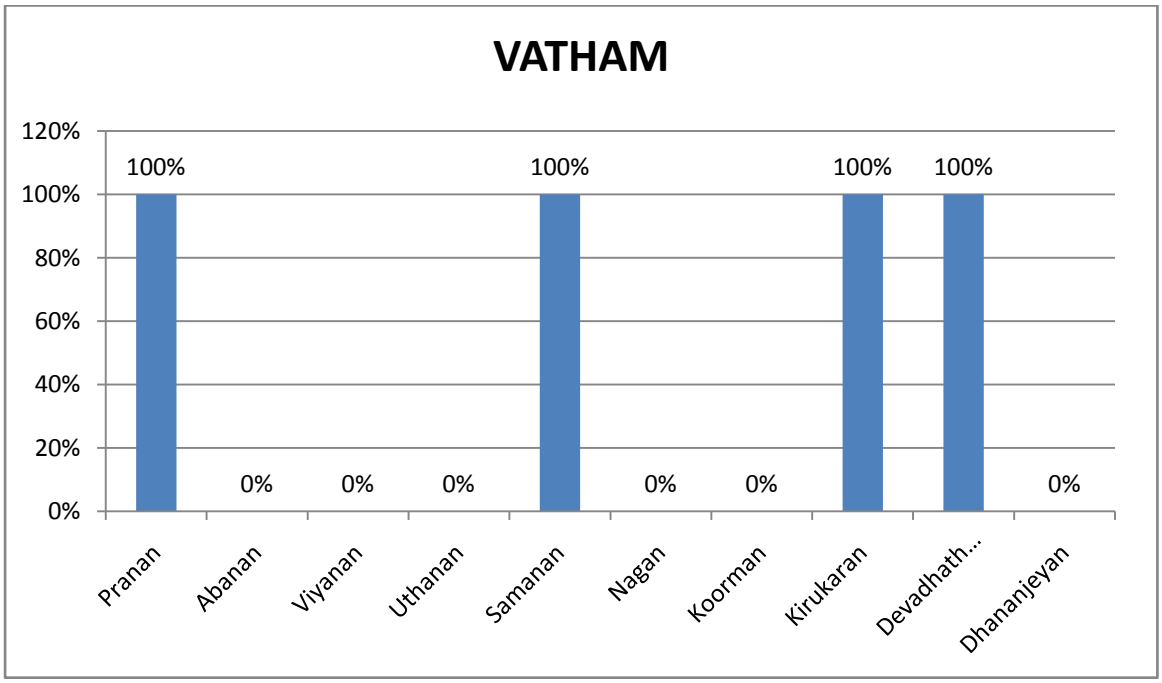
S.No	Paruvakaalam	No. of cases	Percentage
1.	Karkaalam (Avani – puratasi)	0	0
2.	Koothirkaalam (Iyppasi – karthikai)	0	0
3.	Munpani (Markazhi – Thai)	24	60
4.	Pin pani (Masi – Panguni)	16	40
5.	Elavenil (Chitirai, Vaigasi)	0	0
6.	Mudhuvenil (Aani, Aadi)	0	0



Among 40 patients, 60 % were from Munpani kaalam,land, 40 % from Pinpani kaalam.

Table-6.2.8a Distribution of Children with *NEER KANAMANTHAM* according to derangement of Vatham

S.No	Classification of vatham	No. of Cases	Percentage
1.	Pranan	40	100
2.	Abanan	0	0
3.	Viyanan	0	0
4.	Uthanan	0	0
5.	Samanan	40	100
6.	Nagan	0	0
7.	Koorman	0	0
8.	Kirukaran	40	100
9.	Devadhathan	40	100
10.	Dhananjeyan	0	0

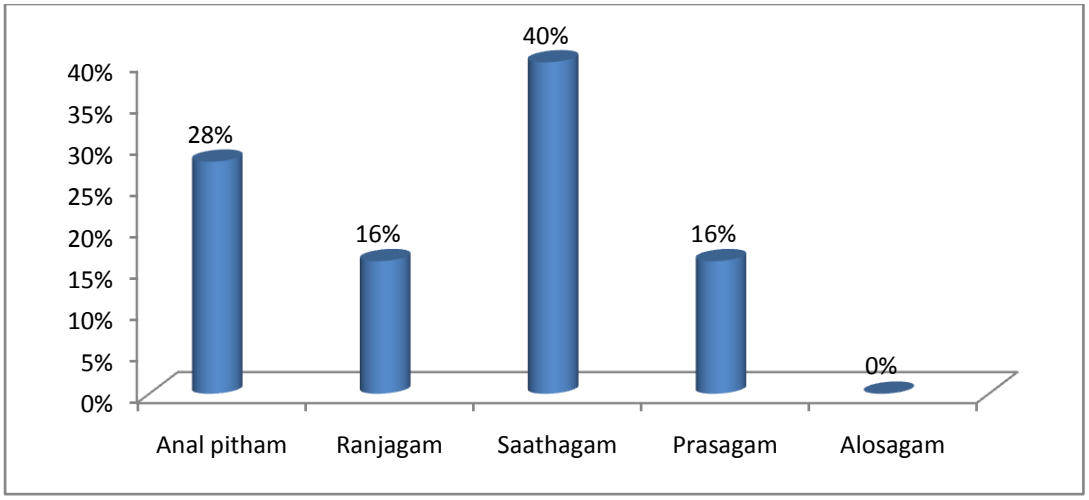


Inference:

According to Vatham, all the 40 patients were observed with pranan, samanan, Kirukaran and Devadhathan.

Table-6.2.8b Distribution of Children with *NEER KANAMANTHAM* according to derangement of Pitham

S.No	Types of pitham	No.of Cases	Percentage
1.	Anal pitham	28	70
2.	Ranjagam	16	40
3.	Saathagam	40	100
4.	Prasagam	16	40
5.	Alosagam	0	0

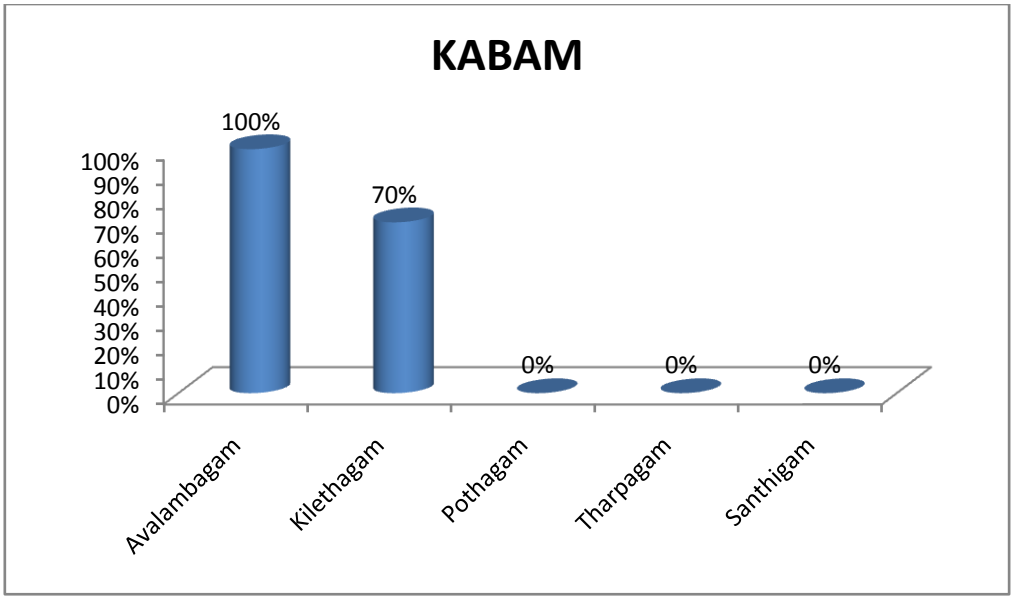


Inference:

According to Pitham, derangement of Analapitham was 28%, Ranjagam and Prasagam was 16%, and Saathagam was 100 %

Table-6.2.8c Distribution of Children with *NEER KANAMANTHAM* according to de-arrangement of Kabam

S.No	Types of Kabam	No. of Cases	Percentage
1.	Avalambagam	0	0
2.	Kilethagam	33	82.5%
3.	Pothagam	0	0
4.	Tharpagam	0	0
5.	Santhigam	0	0

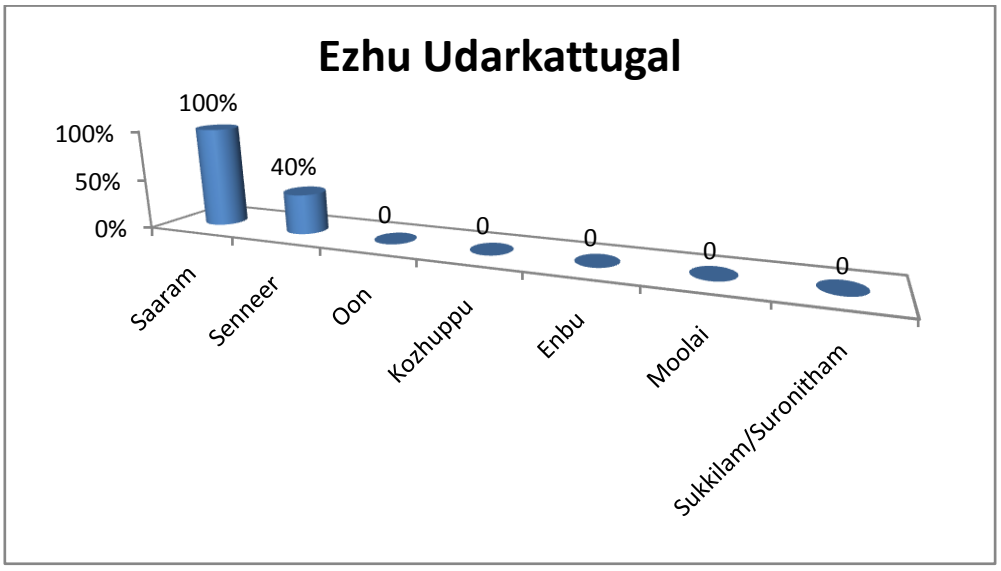


Inference:

According to Kabam, derangement of Avalambagam was 100 % and Kilethagam was 70 %.

Table-6.2.9 Distribution of Children with *NEER KANAMANTHAM* according to derangement of Ezhu Udarkattugal

S.No	Udarkattugal	No.of Cases	Percentage
1.	Saaram	40	100
2.	Senneer	16	40
3.	Oon	0	0
4.	Kozhuppu	0	0
5.	Enbu	0	0
6.	Moolai	0	0
7.	Sukkilam/Suronitham	0	0

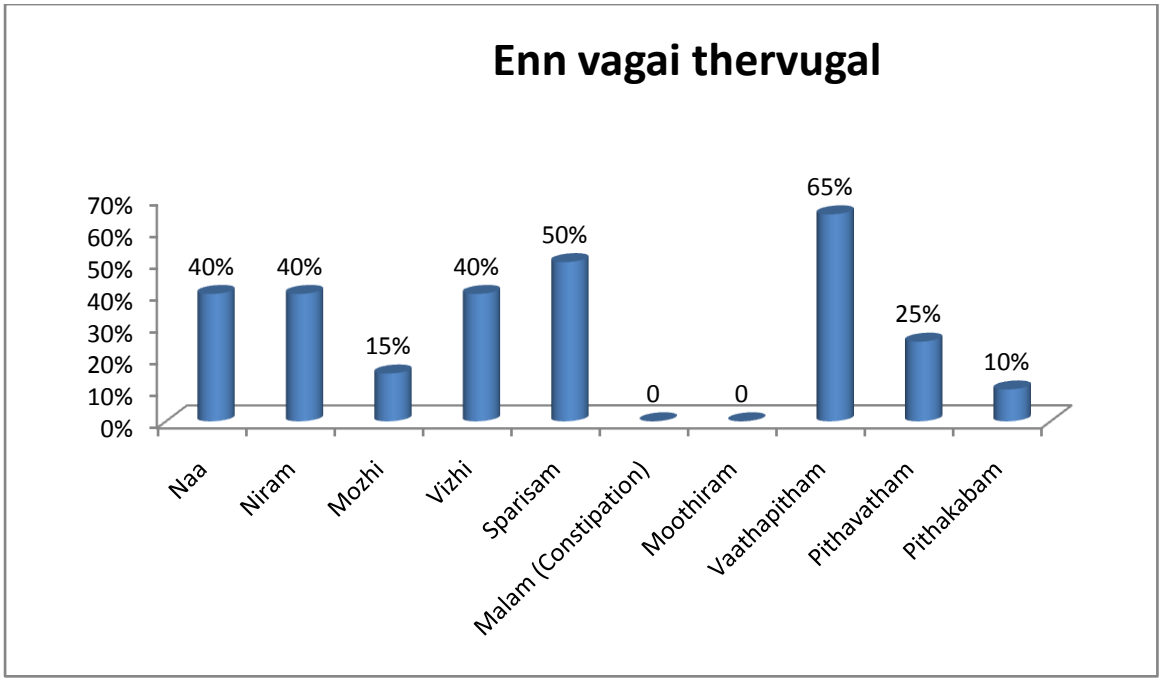


Inference:

Almost all the 40 cases were with saaram and 40% cases were with semeer.

Table-6.2.10 Distribution of Children with *NEER KANAMANTHAM* according to derangement of Enn vagai thervugal

S.No	Enn Vagai Thervugal	No. of Cases	Percentage
1	Naa	15	37.5
2	Niram	0	0
3	Mozhi	25	62.5
4	Vizhi	0	0
5	Sparisam	20	50
6	Malam (Constipation)	0	0
7	Moothiram	0	0
8	**Naadi** Vathapitham Pithavatham Pithakabam	 26 10 4	 65 25 10

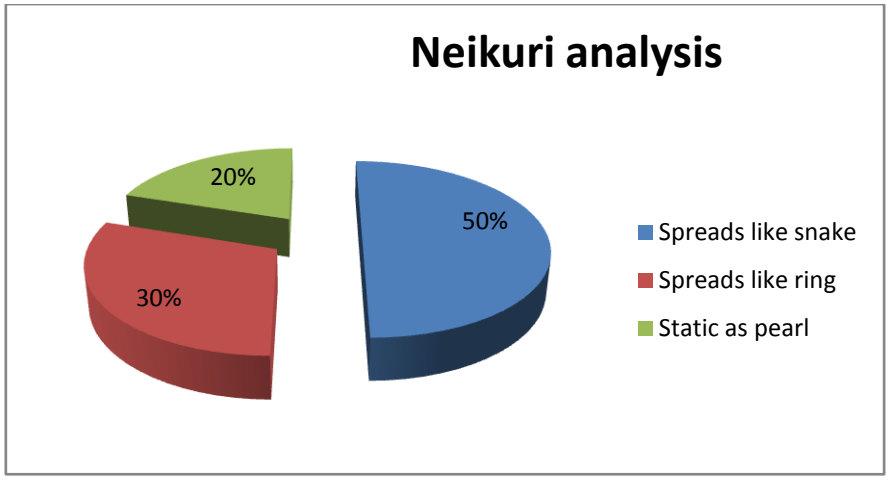


Inference:

Out of 40 cases Low grade fever was observed in 50 % of the cases. 40% of the cases were affected by Naa, Niram and Vizhi. Sparisam was affected by 50 % cases. 15 % cases were affected by mozhi. In Naadi, Vathapitham was observed in 65 % of cases, Pithavatham was observed in 25 % of cases and Pithakabam was observed in 10 % of cases.

Table-6.2.11 Distribution of Children with *NEER KANAMANTHAM* according to observation of Neikuri analysis

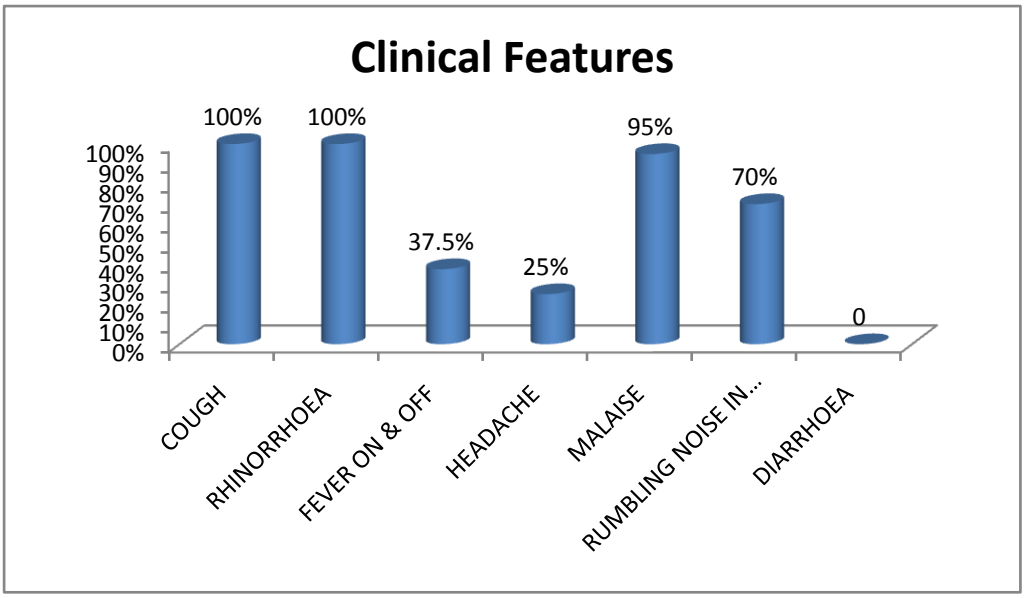
S. No	Character of urine	Neikuri Reference	No.of Cases	Percentage
1.	Spreads like snake	Vatha Neer	20	50
2.	Spreads like ring	Pitha Neer	12	30
3.	Static as pearl	Kaba Neer	8	20



Inference: According to Neikuri, Vatha neer was observed in 50 of the % of cases, pitha neer was observed in 30 % of cases and Kaba neer was observed in 20 % of cases.

Table-6.2.12a Distribution of Children with *NEER KANAMANTHAM* according to observation of *Clinical features*

Sl. No	Clinical Features	No. of Cases	Percentage
1.	Cough	40	100
2	Rhinorrhoea	40	100
3	Fever On & Off	15	37.5
4	Headache	10	25
5	Malaise	38	95
6	Rumbling Noise In Abdomen	28	70
7	Diarrhoea	0	0



Among 40 patients,100% of them had cough and rhinorrhoea,95% had malaise 70% had rumbling noise in abdomen,37.5% had fever on & off,25% had headache.

Table-6.2.12 b Distribution of Children with *NEER KANAMANTHAM* according to observation before and after treatment of Cough assessement:

Before Treatment

S. No.	Cough assessment questions	No. of Cases	% of Cases
1	Chest pain or stomach pain during cough	20	50%
2	Sputum production while coughing	3	7.5%
3	Sleep disturbances due to cough.	30	75%
4	Cough interrupting conversation	22	55%
5	Cough present at rest.	20	50%

After Treatment

S. No.	Cough assessment questions	No of Cases	% of Cases
1	Chest pain or stomach pain during cough	10	25%

2	Sputum production while coughing	1	2.5%
3	Sleep disturbances due to cough.	10	25%
4	Cough interrupting conversation	12	30%
5	Cough present at rest.	5	12.5%

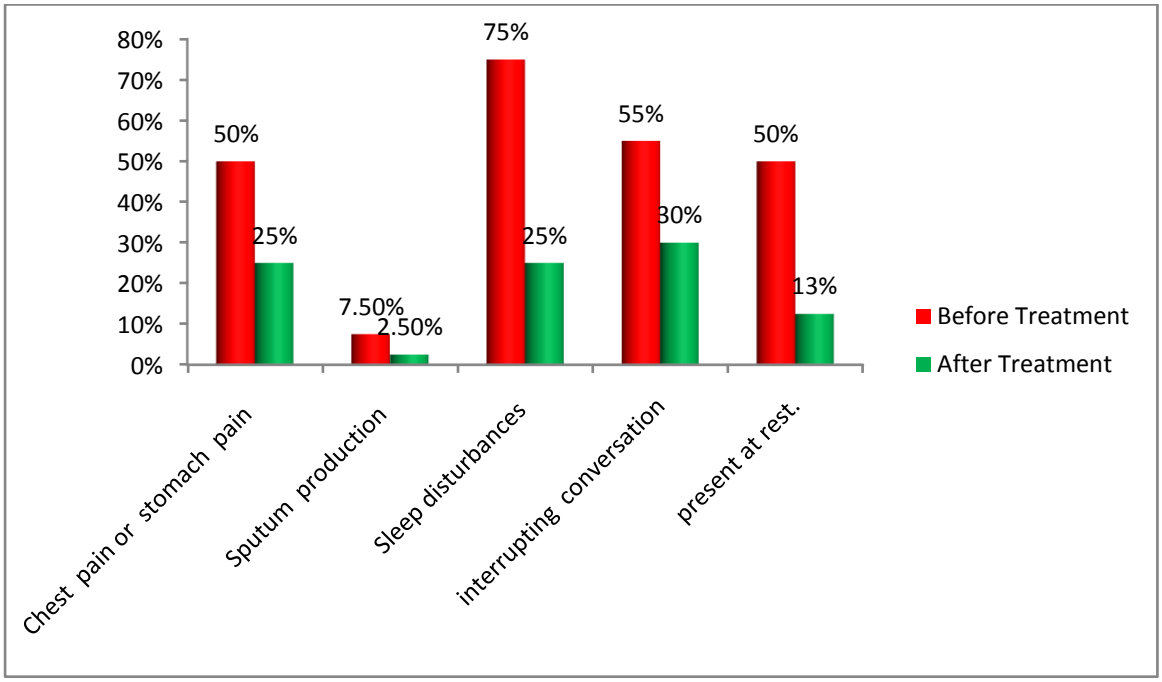


Table- 6.2.12c Cough Assessment score - Before and after treatment:

Before Treatment Score	**After Treatment Score**			
	0	**2**	**4**	**Total**
2	8	0	0	8
4	1	12	3	16
6	0	8	1	9
8	0	4	3	7
Total	9	24	7	40

In the above assessment 8, 16, 9 and 7 patients were scored 2, 4, 6 and 8 respectively; which represents 16/40 patients scored more than 4 before treatment. However none of the patients scored more than 4 after treatment. It reveals that the treatment has influenced in reducing the severity of the clinical conditions. There are 24 and 7 patient cough assessment score after s repoted with 2 and 4 assessment score respectively. Nine patients who are with the score of 2(8 patients), 4(1 patient) have shown no symptoms of cough.

Table-6.2.12d Cough Assessment score –before and after treatment

Cough Assessment Score	**Mean ± Std**	**T value**	**P value**
Before	**4.75±2.0**	11.54	P < 0.001
After	**1.9±1.27**		

The treatment has effect of 60% in reducing the severity in clinical condition of cough which is statistically significant. There is difference between mean value before and after treatment of cough assessment.

Table-6.2.13 Distribution of Childrens with *NEER KANAMANTHAM* according treatment results obtained

S. No	**Results**	**No. of Cases**	**Percentage**
1.	Good Relief	26	65
2.	Moderate Relief	10	25
3.	Mild Relief	4	10

Inference:

Out of the 40 cases, the signs and symptoms were reduced markedly in 65% of cases, moderately in 25% of cases and mildly in 10% of cases. These results were based on the clinical improvements observed.

LAB INVESTIGATION-BEFORE TREATMENT LAB INVESTIGATION

DC: Differential count, P: Polymorphs, L: lymphocytes, M: Monocytes, E: Eosinophils,

B: Basophils

Lab Investigation

S.NO	OP. No./ IP. No.	AGE/ YRS	SEX	HB(%)	TC Cells cu/mm	RBC 10^6 Cells/cu. mm	AEC	ESR ½hr	ESR 1 hr
				BT	BT	BT	BT	BT	BT
1	I50929	3	FC	12.0	12400	4.7	362	6	12
2	E053485	6	FC	12.5	8000	5.2	412	9	20
3	I40713	5	FC	11.2	12000	4.8	342	2	6
4	D067025	3	MC	10.4	7600	5.1	352	4	10
5	H54046	5	MC	11.6	9600	4.6	326	6	14
6	I34139	7	MC	11.0	7000	4.6	372	5	12
7	I38442	5	MC	12.5	7800	4.8	462	10	22
8	I48279	5	FC	10.5	13500	5.1	368	6	14
9	I00036	4	MC	11.0	11000	5.2	316	20	46
1	H03228	3 ½	FC	10.7	10500	4.7	342	12	24
11	I62355	3	MC	12.4	8100	4.9	321	4	10
12	I40279	5	FC	10.4	8400	4.5	295	5	12
13	H53886	3	FC	12.2	6600	4.3	310	8	18
14	I62408	7	MC	10.5	7300	4.5	423	9	20
15	E550101	5	MC	10.4	6000	5.6	298	2	4
16	I62711	6	MC	12.6	8800	4.5	422	6	14
17	I71980	3	FC	10.4	7800	5.1	387	2	4
18	I71965	4	FC	12.5	9700	4.8	427	10	24

19	I71908	7	MC	12.3	13500	4.9	310	12	24
20	I62761	7	MC	10.7	9600	5.2	360	4	10
21	I72398	6	MC	12.4	6900	4.7	340	4	8
22	I72412	4	MC	12.7	7400	4.7	390	12	25
23	I62528	5	MC	10.8	9300	5.6	360	2	4
24	I03504	4 ½	MC	12.8	9900	4.6	310	12	26
25	I59243	4 ½	MC	11.8	6600	4.9	322	2	4
26	G86487	5	MC	12.8	13700	4.9	366	12	26
27	I75050	7	MC	12.3	5100	4.7	345	2	5
28	I75387	3	MC	12.6	9800	4.7	340	6	12
29	H53619	3	FC	12.2	10600	4.6	292	4	10
30	I81173	7	FC	12.3	7900	4.5	368	2	6
31	H97704	7	MC	11.7	8100	4.6	290	2	4
32	G06878	4 ½	FC	12.2	12900	4.2	289	8	20
33	I81704	5	FC	12.6	7900	4.8	400	2	6
34	I43982	6	MC	12.1	8100	4.3	240	2	4
35	I40107	7	MC	12.5	8000	4.2	230	2	4
36	2087	7	MC	12.3	7200	4.3	329	2	6
37	2093	3	MC	12.2	7000	4.5	322	3	8
38	2094	3	MC	10.5	10000	4.7	260	16	34
39	2089	6	FC	12.2	6300	4.3	297	4	8
40	2045	7	MC	12.5	7200	4.6	366	2	6I

HB: Haemoglobin level, TC: Total count, AEC: Absolute eosinophil count

LAB INVESTIGATION

S.No	OP No / IP No.	Age	Sex	P	L	M	E	B
				BT	BT	BT	BT	BT
1	I50929	3	FC	32	54	1	4	1
2	E053485	6	FC	56	38	-	8	-
3	I40713	5	FC	52	44	-	4	-
4	D067025	3	MC	33	62	7	-	-
5	H54046	5	MC	40	53	5	6	1
6	I34139	7	MC	42	52	4	6	-
7	I38442	5	MC	67	23	-	5	-
8	I68878	5	FC	55	40	5	5	-
9	I00036	4	MC	50	48	-	5	-
10	H03228	3 ½	FC	45	50	1	4	-
11	I62355	3	MC	72	33	-	5	-
12	I40279	5	FC	49	45	-	6	-
13	H53886	3	FC	41	51	-	8	-
14	I62408	7	MC	47	52	-	1	-
15	E550101	5	MC	51	42	-	1	-
16	I62711	6	MC	57	44	2	7	-
17	I71980	3	FC	54	37	-	9	-
18	I71965	4	FC	17	32	3	8	-
19	I71908	7	MC	65	29	4	4	2
20	I62761	7	MC	52	40	3	4	1
21	I72398	6	MC	32	64	-	4	-
22	I72412	4	MC	42	50	6	2	-
23	I62528	5	MC	48	48	6	1	-
24	I03504	4 ½	MC	30	50	1	6	-
25	I59243	4 ½	MC	56	39	1	4	-
26	G86487	5	MC	46	47	6	1	-
27	I75050	7	MC	42	28	-	5	-
28	I75387	3	MC	38	54	3	4	1
29	H53619	3	FC	37	58	3	2	0
30	I81173	7	FC	45	48	4	2	1
31	H97704	7	MC	39	55	3	3	1
32	G06878	4 ½	FC	60	33	3	3	1
33	I81704	5	FC	45	50	2	3	-
34	I43982	6	MC	58	32	4	2	1
35	I40107	7	MC	61	30	4	4	1
36	2087	7	MC	46	26	2	6	1
37	2093	3	MC	58	36	2	8	-
38	2094	3	MC	52	43	6	-	-
39	2089	6	FC	75	42	3	1	-
40	2045	7	MC	42	26	3	2	-

DC: Differential count, P: Polymorphs, L: lymphocytes, M: Monocytes,
E: Eosinophils, B: Basophils

LAB INVESTIGATION

S. No	OP. No.	Age	Sex	Alb	Su	Deposits
				BT	BT	BT
1	I50929	3	FC	Nil	Nil	2-8Pus,2-4Epi
2	E053485	6	FC	Nil	Nil	2-4Pus, 2-4 Epi
3	I40713	5	FC	Nil	Nil	2-4Pus, 2-4Epi
4	D067025	3	MC	Nil	Nil	1-2Pus, 2-4 Epi
5	H54046	5	MC	Nil	Nil	4-6 Pus&1-2Epi
6	I34139	7	MC	Nil	Nil	4-6Pus, 6-8 Epi
7	I38442	5	MC	Nil	Nil	3-5Pus, 4-6 Epi
8	I68878	5	FC	Nil	Nil	4-6 Pus&1-2Epi
9	I00036	4	MC	Nil	Nil	3-5Pus, 4-6Epi
10	H03228	3 ½	FC	Nil	Nil	4-6Pus, 2-4Epi
11	I62355	3	MC	Nil	Nil	1-2Pus, 2-4 Epi
12	I40279	5	FC	Nil	Nil	1-2Pus,1,2Epi
13	H53886	3	FC	Nil	Nil	1-2 Pus 2-4Epi
14	I62408	7	MC	Nil	Nil	1-2 Pus,2-3 Epi
15	E550101	5	MC	Nil	Nil	3-5Pus, 2-4 Epi
16	I62711	6	MC	Nil	Nil	1-2Pus, 2-4 Epi
17	I71980	3	FC	Nil	Nil	2-3Pus, 2-Epi
18	I71965	4	FC	Nil	Nil	1-2Pus, 2-4 Epi
19	I71908	7	MC	Nil	Nil	2-3Pus, 1-2Epi
20	I62761	7	MC	Nil	Nil	1-2 Pus,2-4 Epi
21	I72398	6	MC	Nil	Nil	2-3Pus, 2-3 Epi
22	I72412	4	MC	Nil	Nil	2-3 Pus, 1,2Epi
23	I62528	5	MC	Nil	Nil	2-4Pus,1-2 Epi
24	I03504	4 ½	MC	Nil	Nil	2-4 Pus 2-4Epi
25	I59243	4 ½	MC	Nil	Nil	2-4Pus,1-2 Epi
26	G86487	5	MC	Nil	Nil	3-2Pus2-4Epi
27	I75050	7	MC	Nil	Nil	3-5Pus, 2-4Epi
28	I75387	3	MC	Nil	Nil	1-2Pus , 1-2Epi
29	H53619	3	FC	Nil	Nil	1-2Pus, 2-4 Epi
30	I81173	7	FC	Nil	Nil	2-4Pus, 2-4Epi
31	H97704	7	MC	Nil	Nil	1-2Pus, 2-4 Epi
32	G06878	4 ½	FC	Nil	Nil	2-5Pus, 2-3 Epi

33	I81704	5	FC	Nil	Nil	2-4Pus, 2-4 Epi
34	I43982	6	MC	Nil	Nil	1-2Pus, 1-2Epi
35	I40107	7	MC	Nil	Nil	2-3Pus, 1-2Epi
36	2087	7	MC	Nil	Nil	1-2Pus, 2-4 Epi
37	2093	3	MC	Nil	Nil	1-2Pus, 2-4 Epi
38	2094	3	MC	Nil	Nil	2-4Pus, 2-4 Epi
39	2089	6	FC	Nil	Nil	2-4Pus, 2-4 Epi
40	2045	7	MC	Nil	Nil	1-2Pus, 2-4 Epi

DISCUSSION

7. DISCUSSION

Neerkanamantham is an Upper Respiratory Tract Infections which is one of the most common medical problems in the daily lives of people worldwide. Various signs and symptoms of this disease have been characterised as cough, runny nose, frequent fever, head ache, malaise, and rumbling noise in abdomen. In the present study, thirty five cases were treated in the outpatient department, and five cases have been admitted in the inpatient department and treated with *Sirupulladi Ennai which* has been mentioned mentioned in the Sasthric Siddha literature *Balavagadam* having the indication to treat *Kanam.* Since all the ingredients of this medicine are purely herbal it is safe and have good efficacy in treating *Neerkanamantham* in children. The diagnosis is based on clinical observation and laboratory investigations. The diagnosis is confirmed and treated with the drug "*Sirupulladi Ennai*" and the improvements are clearly observed.

The drugs which are mentioned in Siddha literature for the management of neerkanamantham were selected and the study is conducted after the proposal was screened by the Screening committee of National Institute of Siddha. The Clinical study has been approved by IEC of NIS, approval (……). The trial is registered in Clinical trial Registry of India with Reg.No.CTRI/2017/05/008641.The Authentication of ingredients of the trial drug was done obtained from Medicinal Botanist, National Institute of Siddha, Chennai.

The trial drugs were prepared in the Gunapadam practical laboratory of National Institute of Siddha, after getting proper authentication of raw drugs from the Medicinal botany department at NIS, Chennai 47. The trial drug was prepared by the standard operating procedure as mentioned in the protocol.

In-vitro anti-inflammatory activity Sirupuladi Oil (SPO) was studied using albumin denaturation technique. The reaction mixture consisted of bovine serum albumin (5% aqueous solution) and test sample SPO at varying concentration ranges from 100 to 500 mcg/ml and standard diclofenac sodium at the concentration of100 mcg/ml of final volume. pH was adjusted by using a small amount of 1N Hydrochloric acid. The samples were incubated at 37°C for 20 min and then heated at 57°C for 3 min. After cooling the sample, 2.5 ml of phosphate buffer solution was added into each test tube. Turbidity developed was measured spectrophoto-metrically at 660 nm, for control distilled water was used instead of test sample while product control tests lacked bovine serum albumin.

The result obtained from the present clearly indicates that the test drug SPO was effective in inhibiting heat induced albumin denaturation. Maximum percentage inhibition of about 38.31 % was observed at 500 µg/ml when compare to that of the Diclofenac sodium, a standard anti-inflammatory agent with the maximum inhibition 85.32 % at the concentration of 100 µg/ml.

Physico chemical analysis

Physico chemical analysis was done as a preliminary evaluation on the trial drug Sirupulladi Ennai. Iodine value, Saponification value is used to measure the relative degree of unsaturated fatty acid in the sample. Smaller the molar weight of the fat higher the saponification value.The saponification value indicates the mean molecular weight of fatty acid of triglycerides comprising of fat. Lower the saponification value larger the molecular weight of fatty acids and triglyceride vice versa. Since the Iodine & saponification value is 118 & 194 respectively which interprets low molecular weight of the fatty acids and triglycerides.

The refractive index is a measure of purity of a sample. It is a ratio of velocity of light in vacuum. If any adulteration is present in the sample the refractive index will increase or decrease, which is very helpful in determination of unsaturation. Refractive index increases with increase in unsaturation. Since the refractive index is 1.49 it interprets that there is no adulteration in the experimental formulation and degree of unsaturation is low.

Ash values may be effective parameter to assess the degree of purity of a given drug. The ash value indicates the presence of inorganic contents in the sample. Total ash usually consists of carbonates, phosphates, silicates and silica which include both physiological ash-which is derived from the plant tissue itself and non physiological ash which is the residue of the adhering material to the plant surface. The Standard references of ash value according to the European Pharmacopoeia maximum acceptable limit of total ash is 14 % and Acid insoluble Ash is 2%. From the result obtained for the ash test of Sirupulladi ennai, the total ash is found to be within the limit which in turn indicates the prepared drug is pure.

Loss on Drying at 105°C indicates that only 2.83% of water and volatile components have been lost when 1g of the prepared drug was kept at 105°C. This moisture content helped to prevent deprivation of efficacy and degeneration of the drug. High moisture content can adversely affect the active principles of the drug which may possibly get early infection of the drug. Thus low moisture content could get maximum stability and long life.

It is the measure of the acidity or alkalinity of a drug. The pH of any drug is the measure of its hydrogen ion (H^+) concentration relative to that of a given standard solution. The pH may range from 0 to 14, where 0 is most acid, 14 most basic, and 7 is neutral. In the prepared drug the pH level is found to be 6.

Phyto chemical Analysis

Phyto chemical Analysis has been carried out in the trail drug Sirupulladi Ennai and it is found that the presence of flavonoids, steroids, coumarins, phenols, saponins and proteins are found to be positive and the presence of alkaloids, glycosides, sugar, triterepnoids, tannins and anthocyanin are found to be negative.

Flavonoids are potent antioxidants and have anti-inflammatory as well as anti-allergic actions. In addition to reducing oxidative stress, *in vitro* experiments have found that many individual flavonoids have inhibitory effects on IgE mediated immune responses such as histamine secretion by mast cells, shift in cytokine production from Th-2 to Th-1 production and decreased NF-κB activation and inhibition of TNF-α. The biological functions of flavanoids apart from its antioxidant properties include protection against allergies, inflammation, free radicals, platelet aggregation and microbes.

Steroids have been shown to help relieve symptoms in other types of upper respiratory tract infections by reducing the inflammation of the lining of the nose and throat, which means they might also improve the symptoms of the common cold.

The phenolic compounds are one of the largest and most ubiquitous groups of plant metabolites. They possess biological properties such as, antiinflammation, and improvement of endothelial function, as well as inhibition of angiogenesis and cell proliferation activities

Saponins natural tendency to ward off microbes makes them good candidates for treating infections. These compounds served as natural antibiotics, which help the body to fight infections and microbial invasion.

Bio chemical analysis

The Bio chemical analysis of trial medicine showed the presence of Sulphate and Chloride which states that the prepared medicine acts as a good expectorant which in turn reduces the symptoms of cough.

Clinical studies

In clinical studies the patients were recruited for the trial based on inclusion and exclusion criteria and after getting the consent from the patient. 40 patients were included in this study. 35 patients were treated in OPD and 5 patients were treated in the IPD of Ayothidoss Pandithar Hospital of National Institute of Siddha. Separate proforma was maintained for every patient. Progress chart was also maintained to monitor the clinical signs and symptoms of the disease.

The treatment was aimed at normalizing the deranged thodams and providing relief from symptoms. Before treatment the patients were advised to adapt lifestyle modifications with good dietary regimen.

The patients were treated with trial drugs Sirupulladi Ennai for 3 days. Patients were instructed to take the medicines regularly and advised to follow pathiyam and to avoid exposure to allergic substances if any. Out Patients were asked to visit the hospital on 4^{th} day. After completion of the study; the patients were advised to visit the Out-Patient ward of Department of Kuzhanthai Maruthuvam on the seventh day for follow-up. The results observed during the study period were discussed below.

This study evaluates the effect of "Sirupulladi Ennai" in relieving the symptoms of Neerkanamantham.

Clinical Studies

Age:

Out of 40 patients, 62.5 % of cases were 3-5 years, 37.5 % were 6-7 years.

Gender

Out of 40 patients 65% were male children and 35% were female children.

Socio-economic status

About 15 % patients were under high income group, 25% patients were under upper middle class, 42.5 % patients were under upper lower class and 17.5 % patients were under lower middle class. The highest incidence occurred in Upper lower class.

Diet reference

Out of 40 patients 10% were noted as vegetarian and 90% were noted as non vegetarian

Nilam

Among 40 patients, 95 % were from Neithal land and remaining 5 % were from Kurinji land.

Paruvakalam

Among 40 patients, 60 % were from Munpani kaalam,land, 40 % from Pinpani kaalam.

Vatham

According to Vatham, all the 40 patients were observed with pranan, samanan, Kirukaran and Devadhathan.

Pitham

According to Pitham, derangement of Analapitham was 28%, Ranjagam and Prasagam was 16%, and Saathagam was 100 %

Kabam

According to Kabam, derangement of Avalambagam was 100 % and Kilethagam was 70 %.

Ezhu Udarkattugal

Almost all the 40 cases were with saaram and 40% cases were with semeer.

Enn vagai thervugal

Out of 40 cases Low grade fever was observed in 50 % of the cases. 40% of the cases were affected by Naa, Niram and Vizhi. Sparisam was affected by 50 % cases. 15 % cases were affected by mozhi. In Naadi, Vathapitham was observed in 65 % of cases, Pithavatham was observed in 25 % of cases and Pithakabam was observed in 10 % of cases.

Neikuri analysis

According to Neikuri, Vatha neer was observed in 50 of the % of cases, pitha neer was observed in 30 % of cases and Kaba neer was observed in 20 % of cases.

Statistical Analysis (cough)

The treatment has effect of 60% in reducing the severity in clinical condition of cough which is statistically significant.

Improvement in clinical features:

Out of the 40 cases, the signs and symptoms were reduced markedly in 65% of cases, moderately in 25% of cases and mildly in 10% of cases. These results were based on the clinical improvements observed.

From the above results the chosen drug Sirupulladi Ennai is very effective and it is suggested for the treatment of Neerkanamantham in children.

SUMMARY

8. SUMMARY

The literature evidence of both the siddha and modern literatures were reviewed and the reviews and recent studies on the individual drugs of the trial drug were collected. Patients attending the OPD and IPD of NIS having the complaints of NEERKANAMANTHAM are diagnosed clinically.

Sirupulladi Ennai was selected as the drug for the management of NEERKANAMANTHAM. The study is conducted after the proposal was screened by the Screening committee of National Institute of Siddha. The Clinical study has been approved by IEC of NIS. The trial is registered in Clinical trial Registry of India. The Authentication of ingredients of the trial drug was done obtained from Medicinal Botanist NIS. The trial drugs were prepared by the author in the Gunapadam practical laboratory of National Institute of Siddha, after getting proper authentication of raw drugs from the Medicinal botany department at NIS. The trial drug was prepared by the standard operating procedure as mentioned in the protocol.

The drug is found to have with good anti inflammatory activity.

The physicochemical analysis reveals high saponification value, Good refractive index and total Ash value is limited, low moisture content. Phyto chemical Analysis has been carried out in the trail drug Sirupulladi Ennai and it is found that the presence of flavonoids, steroids, coumarins, phenols, saponins and proteins are found to be positive and the presence of alkaloids, glycosides, sugar, triterepnoids, tannins and anthocyanin are found to be negative.

The Bio chemical analysis of trial medicine showed the presence of Sulphate, and Chloride.

The patients have not complained of any adverse effects or difficulties during the course of treatment. Thus the drug is found to be safe and effective in the management of *neerkanamantham.* The observations made during the clinical study showed that the trail drug *sirupulladi ennai* was clinically effective.

CONCLUSION

LAB INVESTIGATION

S.No	OP No / IP No.	Age	Sex	P	L	M	E	B
				BT	BT	BT	BT	BT
1	I50929	3	FC	32	54	1	4	1
2	E053485	6	FC	56	38	-	8	-
3	I40713	5	FC	52	44	-	4	-
4	D067025	3	MC	33	62	7	-	-
5	H54046	5	MC	40	53	5	6	1
6	I34139	7	MC	42	52	4	6	-
7	I38442	5	MC	67	23	-	5	-
8	I68878	5	FC	55	40	5	5	-
9	I00036	4	MC	50	48	-	5	-
10	H03228	3 ½	FC	45	50	1	4	-
11	I62355	3	MC	72	33	-	5	-
12	I40279	5	FC	49	45	-	6	-
13	H53886	3	FC	41	51	-	8	-
14	I62408	7	MC	47	52	-	1	-
15	E550101	5	MC	51	42	-	1	-
16	I62711	6	MC	57	44	2	7	-
17	I71980	3	FC	54	37	-	9	-
18	I71965	4	FC	17	32	3	8	-
19	I71908	7	MC	65	29	4	4	2
20	I62761	7	MC	52	40	3	4	1
21	I72398	6	MC	32	64	-	4	-
22	I72412	4	MC	42	50	6	2	-
23	I62528	5	MC	48	48	6	1	-
24	I03504	4 ½	MC	30	50	1	6	-
25	I59243	4 ½	MC	56	39	1	4	-
26	G86487	5	MC	46	47	6	1	-
27	I75050	7	MC	42	28	-	5	-
28	I75387	3	MC	38	54	3	4	1
29	H53619	3	FC	37	58	3	2	0
30	I81173	7	FC	45	48	4	2	1
31	H97704	7	MC	39	55	3	3	1
32	G06878	4 ½	FC	60	33	3	3	1
33	I81704	5	FC	45	50	2	3	-
34	I43982	6	MC	58	32	4	2	1
35	I40107	7	MC	61	30	4	4	1
36	2087	7	MC	46	26	2	6	1
37	2093	3	MC	58	36	2	8	-
38	2094	3	MC	52	43	6	-	-
39	2089	6	FC	75	42	3	1	-
40	2045	7	MC	42	26	3	2	-

DC: Differential count, P: Polymorphs, L: lymphocytes, M: Monocytes,
E: Eosinophils, B: Basophils

9. CONCLUSION

The Siddha system of medicines has certainity with safer medications to treat children. In the present study, the trial drug *sirupulladi ennai* is used for the treatment of children of age group, 3-7 years who are all diagnosed to have *neerkanamantham.* The ingredients of *sirupulladi ennai* are feasible and useful. These may serve as potentially a useful drug at a lower cost since most of them had anti-inflammatory activity and the physicochemical analysis reveals high saponification value, Good refractive index and total Ash value is limited , low moisture content.

Phyto chemical Analysis has been carried out in the trail drug Sirupulladi Ennai and it is found that the presence of flavonoids, steroids, coumarins, phenols, saponins and proteins are found to be positive. The Bio chemical analysis of trial medicine showed the presence of Sulphate, and Chloride. Clinical results were found to be significant. Good improvement was found in 65% of the cases, moderately in 25% of cases and mildly in 10% of cases. The present clinical study has established that *sirupulladi ennai* is having good result in reducing the majority of the symptoms of *neerkanamantham.* This in turn, provided a further research and opportunity for new drug established in the management of *neerkanamantham.*

By encouraging results of above study the drug may be taken for larger study in treatment of *neerkanamantham.*

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NATIONAL INSTITUTE OF SIDDHA

AYOTHIDOSS PANDITHAR HOSPITAL, CHENNAI – 600 047.

DEPARTMENT OF KUZHANDHAI MARUTHUVAM

CLINICAL EVALUATION OF SIRUPULLADI ENNAI (A SIDDHA DRUG) FOR THE TREATMENT OF NEERKANAMANTHAM (URI) IN CHILDREN.

1. S.No:	2. OP/ IP No:	3.Name:
4.Age:	5.Gender:	6.Date :
7.Informant:	8.Reliability:	

SCREENING Form

INCLUSION CRITERIA:

	YES	NO
Age: between 3-7 years	☐	☐
Cough	☐	☐
Running nose	☐	☐
Fever on & off	☐	☐
Head ache	☐	☐

EXCLUSION CRITERIA

Children < 3 and >7 years	☐	☐
Fever more than 5 days	☐	☐
Childhood asthma	☐	☐
Primary complex	☐	☐
Signs of moderate and severe dehydration	☐	☐
Any other serious illness	☐	☐

ADMITTED TO THE STUDY ☐ ☐

If Yes, OPD ☐ IPD ☐

Signature of Lecturer:

Signature of HOD Signature of Principal Investigator

NATIONAL INSTITUTE OF SIDDHA

AYOTHIDOSS PANDITHAR HOSPITAL, CHENNAI – 600 047.

DEPARTMENT OF KUZHANDHAI MARUTHUVAM

CLINICAL EVALUATION OF SIRUPULLADI ENNAI (A SIDDHA DRUG) FOR THE TREATMENT OF NEERKANAMANTHAM (URI) IN CHILDREN.

CASE RECORD FORM

Demographic data

Patient Id :	OP/IP No:	Visit Date :
Name :		
Age :		
Gender Male ☐ Female ☐		Date Of Birth :
Father/ Mother /Guardian Name :		
Father' s Occupation :		
Father'sMonthly Income :		
Religion :		
Socioeconomic Status :		
Informant :		
Postal Address		
Contact No.		

1.COMPLAINTS AND DURATION:

2.HISTORY OF PRESENT ILLNESS :

3. HISTORY OF PAST ILLNESS:

History /Symptoms/Signs	Yes	No	If, Yes Details
Any Similar Complains	☐	☐	_____
Bronchial Asthma	☐	☐	_____
Dust Allergy	☐	☐	_____
Hospitalization	☐	☐	_____
Any other	☐	☐	_____

4. FAMILY HISTORY:

Any Hereditary/ Familial Disease Yes ☐ No ☐

If Yes, Details ----------

5. Immunisation History

Proper Immunization given Yes ☐ No ☐

.....

6. FOOD HABITS

1. Veg ☐ 2. Non-Veg ☐ 3. Mixed ☐

General assessment

1. Pica	YES	☐	NO	☐
2. Nail biting	YES	☐	NO	☐
3. Bowel movements	Normal	☐	Abnormal	☐

b) Palpation:ss

Tenderness Yes ☐ ☐

Gen

eral examination

Pallor	YES	☐	NO	☐
Jaundice	YES	☐	NO	☐
Cyanosis	YES	☐	NO	☐
Clubbing	YES	☐	NO	☐
Pedal oedema	YES	☐	NO	☐
Lymph adenopathy	YES	☐	NO	☐

Vital signs:-

- Pulse rate _____/ min
- Heart rate _____/ min
- Respiratory Rate _____/ min
- Temperature _____/ ◦F

Anthropometry:-

Height : _____cm

Weight : _____ Kg

Systemic examination

Examination of **Respiratory system**

A) Inspection:

Shape : Normal ☐ Barrel Shaped ☐ Pigeon chest ☐

Shoulder Drooping : Absent ☐ Present ☐

Inter costal spaces : Normal ☐ Bulge ☐ In-drawing ☐

Spine : Normal ☐ Kyphosis ☐ Scoliosis ☐

Supraclavicular fossae: Normal ☐ Flattening ☐ Hollowing ☐

Position of mediastinum:

Trail's sign: Present ☐ Absent ☐

Apical impulse----------No

If yes_____

Tactile vocal Fremitus: Normal and equal ☐

Increased ☐

Decreased ☐

C) Percussion:

Percussion on all areas: Normal ☐

Hyper resonance ☐

Dullness ☐

D) Auscultation:

Intensity of breath sounds:

Normal ☐ decreased ☐ increased ☐

Vocal resonance :

Normal ☐ decreased ☐ increased ☐

Adventitious sounds

Wheeze ☐ Crepitation ☐ Rub ☐ None ☐

Other system;	**Normal**	**Affected**
Cardio vascular system :	☐	☐
Gastro intestinal system:	☐	☐
Musculo Skeletal system :	☐	☐
Central nervous system :	☐	☐
Endocrine system :	☐	☐

Nilam:-

Kurinji ☐ Mullai ☐ Marutham ☐ Neithal ☐ Paalai ☐

Kaala Iyalbu:-

Kaarkalam ☐ Koothirkaalam ☐ Munpanikaalam ☐

Pinpanikaalam ☐ Illavenirkaalam ☐ Muthuvenirkaalam ☐

Yaakai

Vatham ☐ Vatha Pitham ☐ Vatha Kabam ☐

Pitham ☐ Pitha vatham ☐ Pitha Kabam ☐

Kabam ☐ Kaba Vatham ☐ Kaba Pitham ☐

Gunam

Sathuva ☐ Rasatham ☐ Thamasam ☐

Pori / Pulangal

	Normal	Affected	Normal	Affected	Remarks
Mei/ unarvu	☐	☐	☐	☐	
Vaai/ suvai	☐	☐	☐	☐	
Kan/ parvai	☐	☐	☐	☐	
Mooku/ natrai	☐	☐	☐	☐	
Sevi / olli	☐	☐	☐	☐	

Kanmendhirium / Kanmavidayam

	Normal	Affected	Normal	Affected	Remarks
Kai / dhanam	☐	☐	☐	☐	
Kaal / ghamanam	☐	☐	☐	☐	
Vaai / vaku	☐	☐	☐	☐	
Eruvai / visarkam	☐	☐	☐	☐	
Karuvai / anantham	☐	☐	☐	☐	

Uyir Thathukkal

Vatham;	**Normal**	**Affected**	**Remarks**
Pranan	☐	☐	
Abanan	☐	☐	
Viyanan	☐	☐	
Uthanan	☐	☐	
Samanan	☐	☐	
Nagan	☐	☐	
Koorman	☐	☐	
Kirukaran	☐	☐	
Devathathan	☐	☐	

Dhanajeyan	☐	☐

Pitham

	Normal	Affected	Remarks
Analam	☐	☐	
Ranjagam	☐	☐	
Saathagam	☐	☐	
Alosagam	☐	☐	
Prasagam	☐	☐	

Kabam

	Normal	Affected	Remarks
Avalambagam	☐	☐	
Kilethagam	☐	☐	
Pothagam	☐	☐	
Tharpagam	☐	☐	
Samthigam	☐	☐	

Udalthathukkal

	Normal	Affected	Remarks
Saaram	☐	☐	
Senneer	☐	☐	
Oon	☐	☐	
Kozhuppu	☐	☐	
Enbu	☐	☐	
Moolai	☐	☐	

Sukilam / Suronitham ☐ ☐

EnvagaiThervugal

	Normal	**Affected**	**Remarks**
A)Naa			
Niram	☐	☐	
Thanmai	☐	☐	
Suvai	☐	☐	
b)Niram	☐	☐	
c)Mozhi	☐	☐	

d)Vizhi	**Normal**	**Affected**	**Remarks**
Niram	☐	☐	
Thanmai	☐	☐	
Parvai	☐	☐	
e)**Sparisam**	☐	☐	
f)Malam			
Niram	☐	☐	
Nurai	☐	☐	
Elagal	☐	☐	
Erugal	☐	☐	

g) Moothiram

Neerkuri:

Niram ☐ ☐

Edai ☐ ☐

Nurai ☐ ☐

Manam ☐ ☐

Enjal ☐ ☐

Neikuri:

Vatham ☐ Pitham ☐ Kabam ☐ Others ☐

h)Naadi:

Vadham ☐ Pitham ☐ Kabam ☐

Vatha pitham ☐ Pitha vatham ☐ Kaba vatham ☐

Vatha kabam ☐ Pitha kabam ☐ Kaba pitham ☐

CLINICAL ASSESSMENT :

S.NO	CLINICAL SYMPTOMS	1st day	4th day
1.	Cough		
2.	Running nose		
3.	Fever on&off		
4.	Headache		
5.	Malaise		
6.	Rumbling noise in abdomen		
7.	Diarrhoea		

COUGH ASSESSEMENT:

[Each item carries two points and the total score will be assed from the following]

	1st day	4th day
11.Had chest pain or stomach pain during cough	☐	☐
2..Sputum production while coughing	☐	☐
3. Sleep disturbances due to cough.	☐	☐

4.. Cough interrupting conversation ☐ ☐

5 .Cough present at rest. ☐ ☐

Laboratory Investigations:

ROUTINE BLOOD INVESTIGATIONS		NORMAL VALUES	BEFORE TMT Date:	AFTER TMT Date:
Hb (gms%)		11.5 – 14.5		
T.RBC (milli /cu.mm)		4-4.9		
ESR (mm)	½ hr.	0- 4		
	1 hr.	0-13		
T.WBC (milli /cu.mm)		5000-14500		
DIFFERENTIAL COUNT (%)	Polymorphs	40-75		
	Lymphocytes	28-48		
	Monocytes	3-6		
	Eosinophils	0-3		
	Basophils	0-1		

Diagnosis ----------

Drug Issued: ----------

Date :

Station :

Signature of Principal Investigator

Signature of Lecturer:

Signature of HOD

NATIONAL INSTITUTE OF SIDDHA

AYOTHIDOSS PANDITHAR HOSPITAL, CHENNAI – 600 047

DEPARTMENT OF KUZHANDHAI MARUTHUVAM

CLINICAL EVALUATION OF SIRUPULLADI ENNAI (A SIDDHA DRUG) FOR THE TREATMENT OF NEERKANAMANTHAM (URI) IN CHILDREN.

1. S.l. No: 2. OP/ IP No : 3.Name:

4.Age: 5.Gender: 6.Date:

7.Informant: 8.Reliablity:

DRUG COMPLIANCE

NAME OF THE DRUG : SIRUPULLADI ENNAI

FORM OF THE DRUG : OIL

ADMINISTRATION : PER ORAL

DOSE & DURATION : 1.6ML – BD for 3DAYS

NO. OF DRUG PACKETS GIVEN :

NO. OF DRUG PACKETS RETURNED :

DAY	DATE OF DRUG INTAKE	MORNING	EVENING
DAY 1			
DAY 2			
DAY 3			

Signature of Lecturer: Signature of Principal Investigator

Signature of HOD

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INFORMATION SHEET FOR PATIENTS PARTICIPATING IN THE OPEN CLINICAL TRIAL.

I, _____Studying as PG Scholar in the department of kuzhandhai Maruthuvam at National Institute of Siddha, Tambaram Sanatorium is doing a clinical study on NEERKANA MANTHAM [URI]. In this regard, I am in a need to ask you few questions. I will maintain confidentiality of your response and data obtained from you. There will be no risk is involved by taking part in this study.

. You can choose not to take part. You can choose not to answer a specific question. However, taking part in the study may be of benefit to the scientific community, as it may help us to understand the problem of and potential solutions.

If you agree your child to be a participant in this study, he/she will be included in the study primarily by signing the consent form and then you will be given the internal medicine SIRUPULLADI ENNAI-(1.6ml-Twise a day in morning &evening after food for 3days).

The information I am collecting in this study will remain between you and the principal investigator (myself).If you wish to find out more about this study before taking part, you can ask me any related questions or contact me through my mobile number 9962800745.

You can also contact the Member-secretary of Ethics committee, National Institute Siddha,Chennai 600047, Tel no : 91-44-22380789,for rights and participation in the study

தேசிய சித்த மருத்துவ நிறுவனம்

அயோத்திதாச பண்டிதர் மருத்துவமனை சென்னை-47
பட்டமேற்படிப்பு குழந்தை மருத்துவத்துறை

நீர்கண மாந்தம் நோய்க்கான சித்த மருந்தின் (சிறுபுள்ளடி எண்ணெய்) பரிகரிப்பு திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கான தகவல் படிவம்.

ஆராய்ச்சியாளர் பெயர் பா.அனுபாலா.

தேசிய சித்த மருத்துவ நிறுவனத்தில் பட்ட மேற்படிப்பு பயின்று வரும் நான் நீர்கண மாந்தம் என்னும் நோயில் மருத்துவ ஆராய்ச்சியில் ஈடுபட்டுளேன்.

நீர்கண மாந்தம் என்னும் சித்த மருத்துவத்தில் சொல்லப்படும் நோயானது இருமல்,மூக்கு நீர் வடிதல்,சுரம்,தலை புரட்டல்,உடல் முகம் சோர்வடைதல், முதலிய குறிகுணங்கள் காணப்படும் தன்மையுடையது.

இந்த ஆராய்ச்சி சம்மந்தமாக சில கேள்விகள் கேட்கவும், தேவையான ஆய்வக பரிசோதனைக்கு தங்களது குழந்தையை உட்படுத்தவும் உள்ளேன்.

இது சம்மந்தமான தங்களது குழந்தையின் அனைத்து விவரங்களும் ரகசியமாக வைக்கப்படும் என உறுதி அளிக்கிறேன்.இதில் பயணப்படி முதலிய எந்த உதவி தொகையும் வழங்கப்பட மாட்டாது.

இந்த ஆராய்ச்சியின் போது தங்களது குழந்தையின் உடலுக்கு வேறு பாதிப்பு ஏற்படும் பட்சத்தில் தேசிய சித்த மருத்துவமனையில் தக்க சிசிச்சை அளிக்கப்படும்.

இந்த ஆராய்ச்சிக்கு தங்கள் விருப்பத்தின் பேரில் குழந்தையை உட்படுத்தும் பட்சத்தில் உள்மருந்தாக சிறுபுள்ளடி எண்ணெய் 1.6 மிலி 3 நாட்கள் எடுக்க வேண்டும்.

இந்த ஆராய்ச்சியில் நோயினரக சேர்ந்த பிறகு உங்களுக்கு விருப்பம் இல்லையெனில் எப்போது வேண்டுமானாலும் தங்களது குழந்தையை விலக்கிக் கொள்ளலாம்.

இந்த ஆராய்ச்சி சம்மந்தமாக மற்ற விபரங்களுக்கும் நோயின் தன்மை பற்றியும் அறிவதற்கும் முதன்மை ஆராய்ச்சியாளரான பா.அனுபாலா. (பட்ட மேற்படிப்பாளர் குழந்தை மருத்துவ பிரிவு) கைபேசி எண் 9962800745 எப்போதும் தொடர்பு கொள்ளலாம்.

மேலும் இந்த ஆராய்ச்சிக்கு IEC (நிறுவன நீதிநெறிகுழு) சான்று பெறப்பட்டுள்ளது.

இந்த மருத்து சிறப்பாக நீர்கண மாந்தம் நோய்க்காக அங்கீகரிக்கப்பட்ட சித்த மருத்துவ நூலில் கூறப்பட்டுள்ளது. ஏற்கனவே உபயோகத்தில் உள்ளது . இதுவரை நோயாளிகளிடம் எந்த வித பக்க விளைவுகளை ஏற்படுத்தவில்லை.

NATIONAL INSTITUTE OF SIDDHA

AYOTHIDOSS PANDITHAR HOSPITAL

CHENNAI – 600 047.

DEPARTMENT OF KUZHANDHAI MARUTHUVAM

CLINICAL EVALUATION OF SIRUPULLADI ENNAI (A SIDDHA DRUG) FOR THE TREATMENT OF NEERKANAMANTHAM (URI) IN CHILDREN.

1. S.I No: 2. OP/ IP No: 3.Name:

4. Age: 5.Gender: 6.Date:

7. Informant: 8.Reliablity:

WITHDRAWAL FORM

Date of trial commencement :

Date of withdrawal from trial :

Reason(s) for withdrawal :

Long absence at reporting : Yes/ No

Irregular treatment : Yes/ No

Shift of locality : Yes/ No

Complication adverse reactions if any : Yes/ No

Exacerbation of symptoms : Yes/ No

Patient not willing to continue : Yes/ No

Date: Signature of Principal Investigator

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1. S.No:	2. OP/ IP No :	3.Name:
4.Age	5.Gender:	6.Date:
7. Informant:	8.Reliablity:	

ADVERSE REACTION

Name	:
Age	:
sex	:
OPD/ IPD No	:
Date of occurrence	:
Date of withdrawal from trial	:
Description of adverse reaction	:
Clinical condition	:

Date: Signature of Principal Investigator

NATIONAL INSTITUTE OF SIDDHA

AYOTHIDOSS PANDITHAR HOSPITAL, CHENNAI – 600 047.
DEPARTMENT OF KUZHANDHAI MARUTHUVAM

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DIET FORM

உணவு பத்திய முறைகள்

- தூதுவேளை ரசம், துவையல் கொடுக்கவும்.
- சூப் வகைகள் கொடுக்கவும்.
- பாலில் மிளகுத் தூள், பனங்கற்கண்டு கலந்து கொடுக்கவும்.
- துளசிச் சாற்றில் தேன் கலந்து கொடுக்கவும்
- புகை, தூசி, பனிகாற்றில் நடமாடுவதை தவிர்க்கவும்.
- குளிர்ச்சி, இனிப்பு பொருட்களை தவிர்க்கவும்.

தேசிய சித்த மருத்துவ நிறுவனம்
அயோத்திதாச பண்டிதர் மருத்துவமனை சென்னை47
பட்டமேற்படிப்பு குழந்தை மருத்துவத்துறை

சிறுபுள்ளடி எண்ணெய் பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்வு

ஒப்புதல் படிவம்

நான் இந்த மருத்துவ ஆய்வை குறித்த அனைத்து விபரங்களையும் நோயாளியின் பெற்றோருக்கு புரியும் வகையில் எடுத்துரைத்தேன் என உறுதி அளிக்கிறேன்.

தேதி: கையொப்பம்:
இடம்: பெயர்:

நோயாளியின் பெற்றோர் ஒப்புதல் படிவம்

என்னிடம் இந்த மருத்துவ ஆய்வின் காரணத்தையும் ,மருந்தின் தன்மை மற்றும் மருத்துவ வழிமுறைப் பற்றியும் ,இந்த மருத்துவத்தை தொடர்ந்து எனது குழந்தையின் உடல் இயக்கத்தைக் கண்காணிக்கவும்,அதனைத் பாதுகாக்க பயன்படும் மருத்துவ ஆய்வுக்கூடப் பரிசோதனைகள் பற்றியும் திருப்தி அளிக்கும் வகையில் ஆய்வு மருத்துவரால் விளக்கிக் கூறப்பட்டது.

நான் இந்த மருத்துவ ஆய்வின் போது எப்போது வேண்டுமானாலும் என் குழந்தையை விடுவித்துக் கொள்ளும் உரிமையை தெரிந்திருக்கிறேன்.

நான் என்னுடைய சுதந்திரமாக தேர்வு செய்யும் உரிமையைக் கொண்டு நீர்கண மாந்தம் நோய்க்கான சிறுபுள்ளடி எண்ணெய் பரிகரிப்புத் திறனை கண்டறியும் மருத்துவ ஆய்வுக்கு எனது குழந்தையை உட்படுத்த ஒப்புதல் அளிக்கிறேன்.

தேதி: பெற்றோர் பெயர்:
இடம்: கையொப்பம்:
சாட்சிக்காரர் பெயர்:
உறவு முறை:
கையொப்பம்:

Services offered: Standardization and Characterization of AYUSH formulations
In-vitro and In-silico Evaluations/ Instrumental analysis/Histopathological Analysis
Blood & Serum Estimations
Thesis Writing/ Research Article Preparation and Publication Services

Noble Research Solutions

We Trust in Quality and Ethics

Date: 31.03.2017

To,

Dr.Anubala

National Institute of Siddha

Tambaram Sanatorium, Chennai - 600 047, Tamil Nadu, India.

Project Id : **NRS/AS/0024/02/2017**

This is to certify that Dr.Anubala from National Institute of Siddha, Chennai has carried out the following activity at our facility for the trial drug Sirupuladi Oil (SPO)

Project Delivery Report

S.No	**Study Description**	**Annexure no**
1.	Standardization and Physicochemical Evaluation of study drug *Sirupuladi Oil (SPO)*	I
2.	In-vitro Anti-Inflammatory Evaluation of *Sirupuladi Oil (SPO)* by Protein (Albumin) denaturation Assay	II

Note:

- *Annexures was attached as a separate enclosure along with this report.*

E-mail: nobleresearchsolutions@gmail.com
Contact: 9710437419, Admin: 044 - 42691289

The Tamil Nadu Dr.M.G.R.Medical University

69,Anna Salai,Guindy,Chennai - 600 032.

This Certificate is awarded to Dr/Mr/Mrs...B. Anuja.....

for participating as ~~Resource Person~~ / Delegate in the Nineteenth Workshop on

" RESEARCH METHODOLOGY & BIOSTATISTICS "

For AYUSH Post Graduates & Researchers

Organized by the Department of Siddha

The Tamil Nadu Dr. M.G.R. Medical University from 07 th to 11 th September 2015.

Dr.N.KABILAN, M.D.(Siddha)
READER,DEPT.OF SIDDHA

Prof. **Dr.P.ARUMUGAM,** M.D.,
REGISTRAR I/C

Prof. **Dr.D.SHANTHARAM,** M.D., D.Diab.,
VICE CHANCELLOR

NATIONAL INSTITUTE OF SIDDHA
राष्ट्रीय सिद्ध संस्थान

Department of AYUSH- MINISTRY OF HEALTH & FAMILY WELFARE
आयुष विभाग - स्वास्थ एवं परिवार कल्याण मंत्रालय
GOVERNMENT OF INDIA-भारत सरकार

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F.No.NIS/6-20/IEC/15-16 Dt: 05.10.2015

CERTIFICATE

Address of Ethics Committee: National Institute of Siddha, Tambaram Sanatorium, Chennai-600047, Tamil Nadu, India	
Principal Investigator:Dr.B.Anubala, Department of Kuzhandhai Maruthuvam	
Protocol title: A Clinical Evaluation of "SIRUPULLADI ENNAI" a Siddha Drug in the treatment of "NEERKANA MANTHAM" (URI) in Children.	
Documents filed	1) Protocol, 2) Data Collection forms 3) SAE(Pharmacovigilance)
Clinical trial Protocol (others – Specify)	Yes
Informed consent documents	Yes
Any other documents	-
Date of IEC approval & its number	NIS/IEC/9/2014-15/18 – 26.08.2015

We approve the trial to be conducted in its presented form.

The Institutional Ethics Committee expects to be informed about the progress of the study, any SAE occurring in the course of the study.

Chairman

Member Secretary

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 600047

BOTANICAL CERTIFICATE

Certified that the following plant drugs used in the Siddha formulation "**Sirupulladi Ennai**" (Internal) for Neerkanamantham taken up for Post Graduation Dissertation studies by **Dr.B.Anubala**, M.D.(S), II year, Department of Kuzhandhai Maruthuvam, 2016, are identified through Visual inspection, Experience, Education & Training, Organoleptic characters, Morphology, Micromorphology and Taxonomical methods as

Desmodium triflorum DC. (Fabaceae), Whole plant

Caesalpinia bonduc (L.) Roxb. (Caesalpiniaceae), Tender leaves

Indigofera tinctoria Linn. (Fabaceae), Whole plant

Ipomoea marginata (Desr.) Verdc. (Convolvulaceae), Leaves

Phyla nodiflora (L.) Greene (Verbenaceae), Leaves

Sesamum indicum Linn. (Pedaliaceae), Seed oil

MEDICINAL BOTANY CHENNAI 600 047 National Institute of Siddha

Certificate No: NISMB2302016

Date: 28-5-2016

Authorized Signatory

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